National Association of Purchasing Management ®

Report On Business®

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Purchasers Report Renewed Economic Growth; Index Rebounds to 56.8%

Employment Growth Rate Greatest in '88

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

October Report

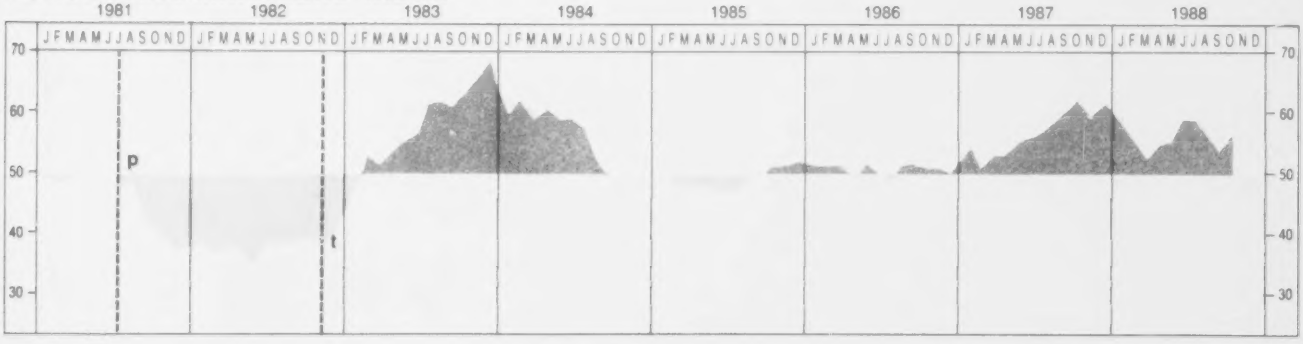
The economy improved the rate of growth in October after slowing in September to the lowest growth rate in six months, say the nation's purchasing executives in their latest ***Report on Business.*** **Production** growth rate expanded briskly at the highest rate in three months. **New Orders** also continued to grow at a slightly faster pace than in September.

New **Export Orders,** a major element of recent economic growth, continued to increase but showed signs of fatigue for the third consecutive month. Of those members who export, 26% reported higher export orders, virtually unchanged from 27% in September, but lower than the 37.8% average of the first seven months of 1988. The 8% reporting lower export orders increased from 6% in September and is the most to report lower in 1988.

Vendor Deliveries continued slower at about the same rate as September. **Inventories** declined somewhat for the third consecutive month. **Employment** increased for the fifth consecutive month in October at the strongest rate of growth in 1988. Although **Prices** increased for the 27th consecutive month, the rate of growth is the lowest in the past seventeen months. And, the number of commodities reported up in price is 18, down from 30 in September.

The Report was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "October's growth heralded a healthy resilience in the economy as it entered the fourth quarter. Despite the apparent slowing in the growth rate of new Export Orders, the continued high level of New Orders, coupled with a reduced inflation rate, suggests the fourth quarter economy will be as good as the previous three."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

January	57.4	June	59.3
February	54.9	July	59.0
March	53.3	August	56.2
April	54.9	September	54.8
May	55.1	October	56.8

The ***Purchasing Managers' Index*** recovered to 56.8% in October, up from 54.8% in September. The 56.8% reverses a three month decline and marks the 27th consecutive month this leading indicator has exceeded 50%. A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. Bretz added, "The average for the first ten months of 1988 is 56.2%. Past experience indicates that if the average were to continue for the last two months of 1988, it would be consistent with real GNP growth of about 3.7%, unchanged from the past three months."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

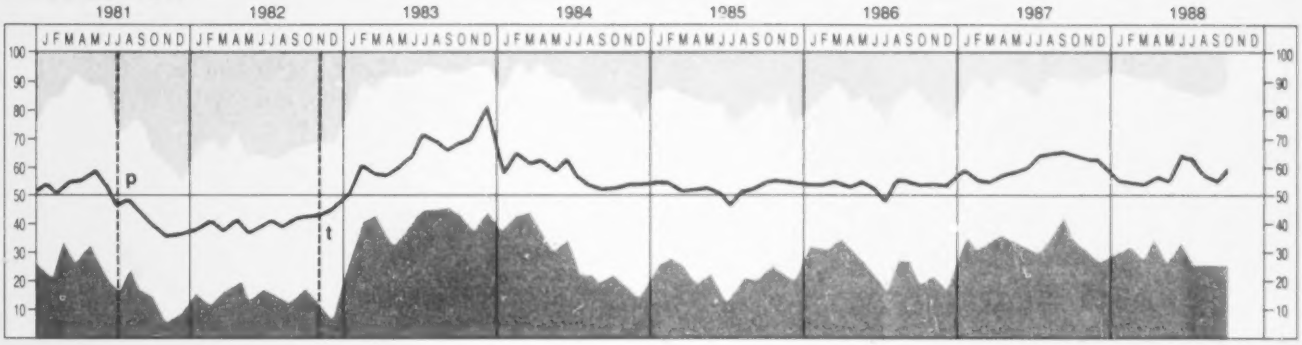
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

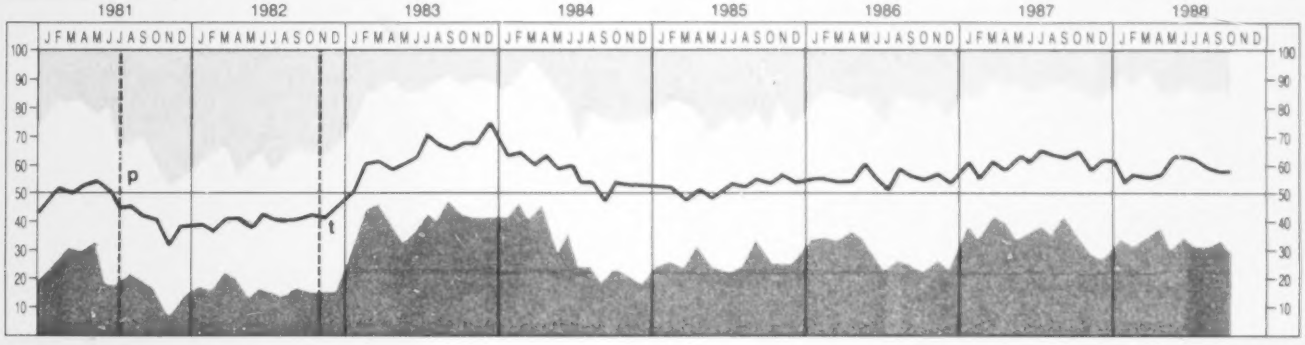
PRODUCTION



Production increased in October for the 27th consecutive month. The index, at 60.3%, indicates the highest rate of growth since July (62.7%) and reverses three consecutive months of slowing in the rate of growth.

Production	%Better	%Same	%Worse	Net	Index
October	26	65	9	+17	60.3
September	26	62	12	+14	56.0
August	26	60	14	+12	58.2
July	25	62	13	+12	62.7

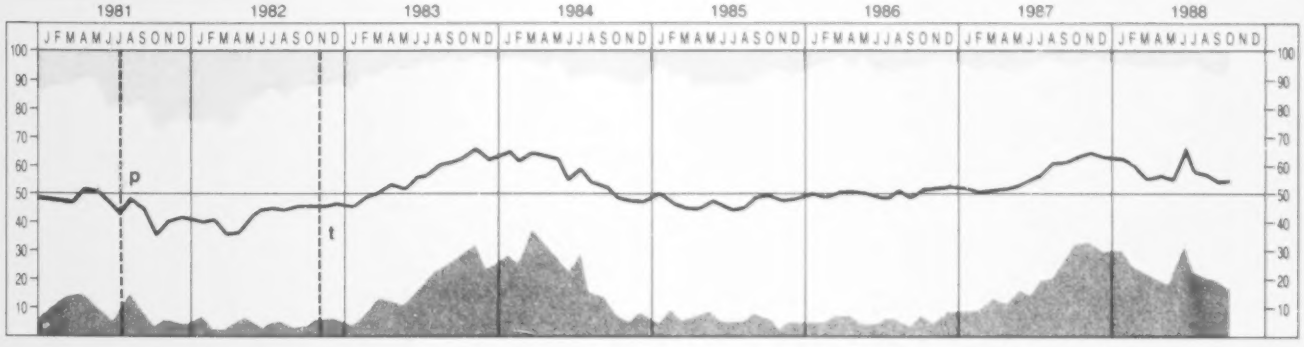
NEW ORDERS



New Orders continued to expand in October for the 41st consecutive month after taking into consideration normal seasonal variations. The index registered 58.9% and reversed three consecutive months of slowing growth rate. The high level of growth suggests continued growth in Production in November.

New Orders	%Better	%Same	%Worse	Net	Index
October	28	54	18	+10	58.9
September	34	55	11	+23	58.4
August	31	54	15	+16	59.9
July	31	57	12	+19	62.1

VENDOR DELIVERIES



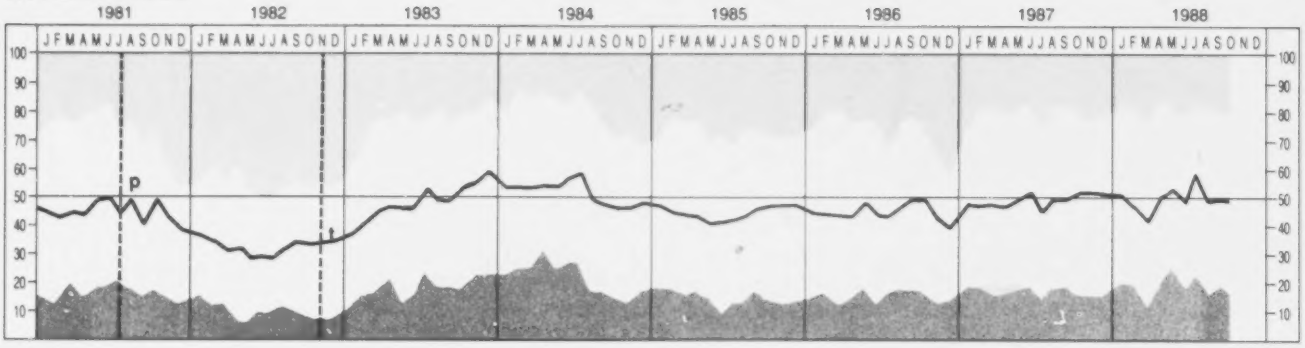
For the 25th consecutive month, Vendor Deliveries slowed. The index, at 55.6%, is only slightly higher than in September (55.0%) and continues to signal an overall lessening in the slowing of deliveries experienced since August 1987. Nevertheless, numerous commodities continued to be reported in short supply.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
October	17	77	6	+11	55.6
September	19	73	8	+11	55.0
August	20	73	7	+13	58.1
July	21	75	4	+17	58.8

IN SHORT SUPPLY:

Aluminum (13th consecutive month), **Copper** (2nd consecutive month since May 1988), **Steel** (17th time in 20 months), **Stainless Steel** (10th consecutive month), **Steel Tubing** (2nd time in 3 months), **Bleached Paperboard** (4th consecutive month), **Polyethylene** (6th consecutive month; used heavily in making packaging materials and paper coatings), **Plastic Resins** (6th consecutive month), **Acrylic Acid** (3rd time in 4 months; used in manufacturing plastics), **Caustic Soda and Soda Ash** (17th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (7th consecutive month; some easing in tightness reported; used heavily in making ethylene oxide, plastic resins and glycols), **Ethylene Oxide** (8th consecutive month), **Ethylene Derivatives** (4th time in 5 months). NOTE: three major ethylene and ethylene-derivative plants previously closed because of fires, are now back in production. **Phenol** (7th consecutive month; used heavily in making phenolic resins), **Titanium Dioxide** (15th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Motor Bearings** (3rd consecutive month).

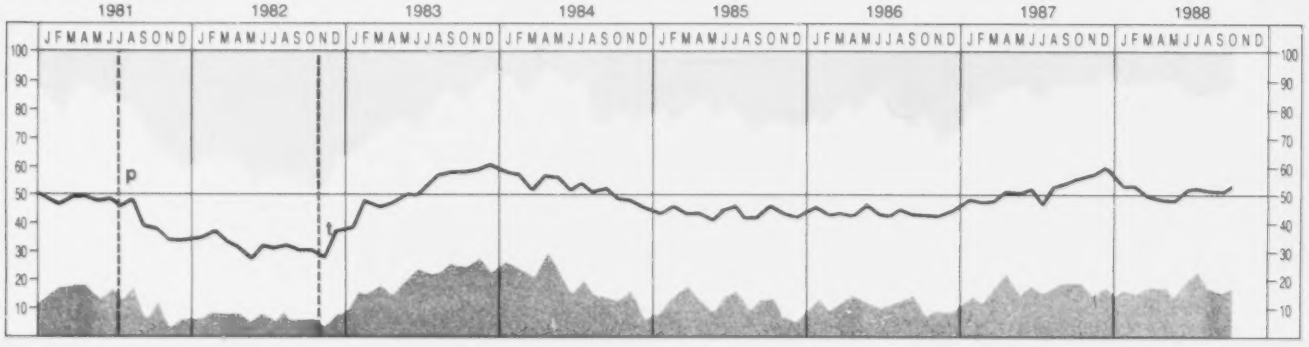
INVENTORIES



Inventories declined slightly in October, considering normal season variations, marking the third consecutive month they have decreased. Apparently the growth in the economy is not being assisted by increasing inventories.

Inventories	%Higher	%Same	%Lower	Net	Index
October	15	65	20	−5	49.4
September	20	61	19	+1	49.6
August	18	64	18	0	48.6
July	22	60	18	+4	55.1

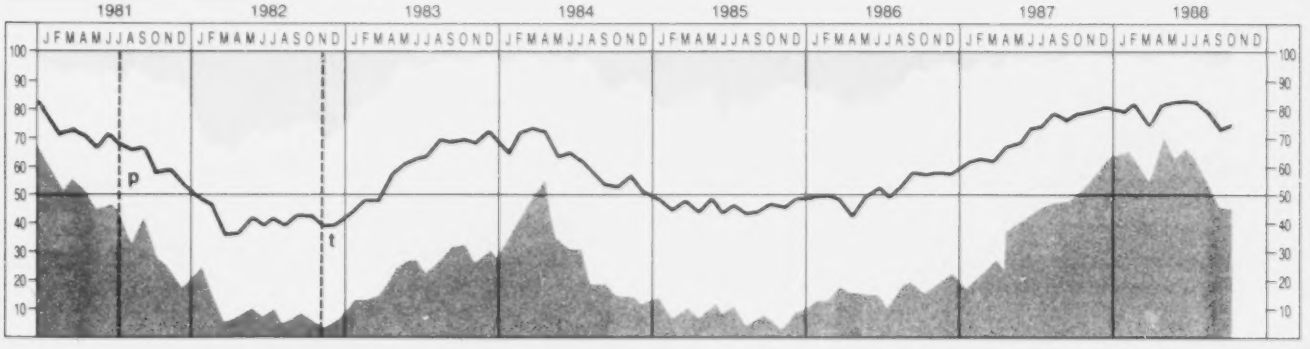
EMPLOYMENT



Employment increased sharply in October. This was the fifth consecutive month Employment grew after considering normal seasonal variations. At 53.7%, the index was the highest through all of 1988 and reversed two previous months in which the rate of growth slowed.

Employment	%Higher	%Same	%Lower	Net	Index
October	16	72	12	+4	53.7
September	14	70	16	−2	50.2
August	16	68	16	0	50.7
July	19	69	12	+7	51.7

COMMODITY PRICES



October was the 27th consecutive month that more purchasers reported price increases than decreases. The good news is that the index fell for the fourth consecutive month to 70.7% and is at the lowest since May 1987 (67.8%). The declining rate of price increases, coupled with a significant reduction in the number of commodities noted as being higher priced, may well be the beginning of a trend toward lower inflation.

Prices	%Higher	%Same	%Lower	Net	Index
October	45	51	4	+41	70.7
September	47	49	4	+43	72.2
August	55	40	5	+50	78.7
July	63	35	2	+61	81.1

UP IN PRICE:

Copper (18th time in 20 months), **Steel** (25th time in 26 months), **Stainless Steel** (10th consecutive month), **Zinc** (9th time in 10 months; used heavily in metal alloys and as a protective coating for metals), **Castings** (3rd consecutive month), **Printing Paper** (19th time in 22 months), **Paper Products** (9th consecutive month), **Polyethylene** (16th time in 17 months; used heavily in making packaging materials and paper coatings), **Plastic Resins** (16th time in 17 months), **Plastic Products** (17th time in 18 months), **Phenol** (2nd time in 4 months; used heavily in making phenolic resins), **Alcohols, Caustic Soda** (23rd consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (14th time in 15 months; used heavily in making ethylene oxide and plastic resins), **Ethylene Derivatives** (8th time in 9 months), **Ethylene Glycols** (3rd time in 4 months), **Titanium Dioxide** (6th time in 7 months; a lead-free pigment used heavily as a whitener in coatings, paints, paper and other industrial applications), **Sugar** (2nd time in 3 months).

DOWN IN PRICE:

Fuel Oil (9th time in 11 months), **Diesel Fuel, Black Pepper** (2nd time in 3 months).

BUYING POLICY

Lead times for Production Materials declined in October, mirroring the lessening rate of growth in slower Vendor Deliveries. Lead times of 90 days and longer dropped to 20% of purchasers, down sharply from 26% in September and the lowest since September 1987 (also 20%). Lead times for Capital Expenditures fell, with 57% of members reporting lead times in the 6 months and longer category, down from September's exceptionally high level of 60%. Lead times for Maintenance, Repair and Operating (MRO) lengthened somewhat as the number of members reporting lead times of 30 days or less declined to 80%, down from 85% in September.

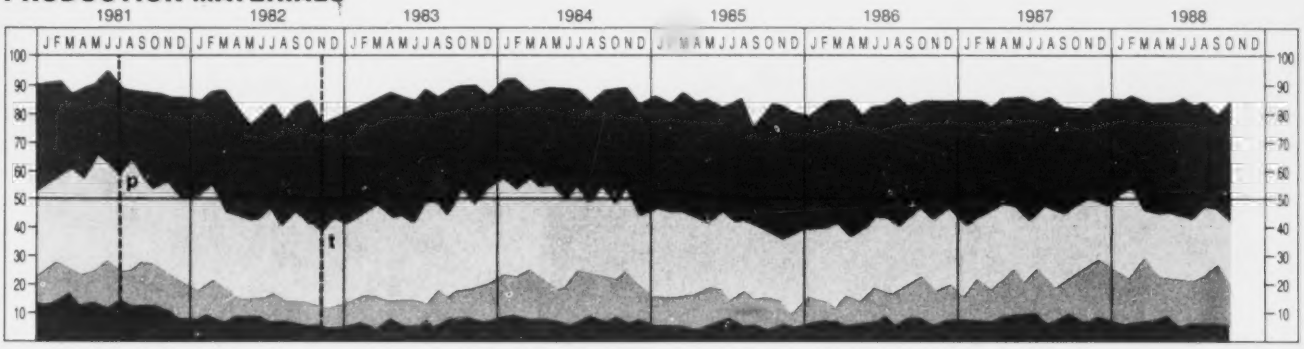
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
October	15	42	23	15	5
September	16	34	24	20	6
August	16	35	27	16	6
July	16	40	23	15	6

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
October	10	6	12	15	57
September	9	5	10	16	60
August	12	5	12	16	55
July	8	5	13	18	56

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
October	38	42	13	5	2
September	38	47	13	2	0
August	40	45	11	4	0
July	35	48	15	2	0

PRODUCTION MATERIALS



Commodity Report
October, 1988

Paper Products
Prepared by the NAPM Paper Committee. Chair: Glen Farber, C.P.M., Vanier Graphics Corp., Santee, CA.

Newsprint: This commodity seems to be the one weak segment of the industry. Newsprint is readily available now and projected to remain the same for six months, with deliveries better or unchanged. Most plants are decreasing inventories, though reduced demand sometimes prevents this. Discounts are available with no price increases in near term, though possible in spring, 1989, depending on demand. Considerable new capacity is coming on shortly. This grade continues to be the first indication of a possible market turnaround.

Uncoated Groundwood: This commodity is not as weak as newsprint but not as tight as free sheet grades. Shipments are 3.1% Y-T-D through June with most increases going to the publishing industry. This grade continues to be a major imported item.

Coated Groundwood: This commodity still remains tight (tighter than coated free sheet) but there are early indications of loosening. It is a large growth item Y-T-D. One article indicates possible high inventories but two respondents indicate "on the edge" and "difficult to meet demand." Recent price increases are holding, with no more expected within 6 months. Some added capacity is expected.

Uncoated Free Sheet: This grade remains very strong, especially shipments to commercial printers, envelope convertors, and book publishers. Shipments through June 1988 are up 6.5% versus the same period of 1987. Two new machines recently started up at Weyerhaeuser and Georgia-Pacific, with announcements by Boise and Willamette for additions in late 1990. Incremental growth is expected between now and then, although Weyerhaeuser and Georgia-Pacific effects have yet to be felt in the marketplace. Several respondents report that supply is very tight and on allocation, and most expect this to continue. Lead times are variable depending on the supplier. After a price increase October 1st, most feel prices will not change for 6 months — with the possible exception of reprographics. This is not a good time for just-in-time inventories. There is still major labor unrest throughout the industry.

Coated Free Sheet: Supplies are very tight and on allocation, which is expected to continue for 6 months. Production capacity will not increase in the near term. Champion and Westvaco have recently announced capacity additions for late 1990. Lead times and inventories are stable with a few increases. Recent price increases are holding and more are expected within 6 months. This grade has been a big growth item and API reports an 11.2% increase in tons shipped in the last 6 months vs. the same period of 1987.

Bleached Bristols: This commodity was a surprise growth item this year. Supplies are normal to tight; lead times are increasing, with certain grades worse than others. Inventories are static. Prices are increasing. No new capacity is announced.

Paperboard/Linerboard: These grades are very tight and close to being on allocation, with no change expected for 6 months. SBS appears to be the tightest with lead times rapidly stretching. No added capacity is expected in the near future for this grade, and only incremental additions in capacity for linerboard. Inventories show no change or are up slightly. Prices for paperboard increased in October. The largest linerboard supplier announced increases for January 1 and appears to be looking for support. This grade really depends on the overall health of the economy.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc. 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602 752-NAPM (752-6276). Telecopier: 602 752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. the REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

The next issue of *REPORT ON BUSINESS* will be available December 5.

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National Association of Purchasing Management®

Report On Business®

December 5, 1988
Volume 6, Number 12

November Report

Continued Robust Growth; Index Holds at 56.6%

Inflation Rate Continues Downtrend

Export Orders Slow

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

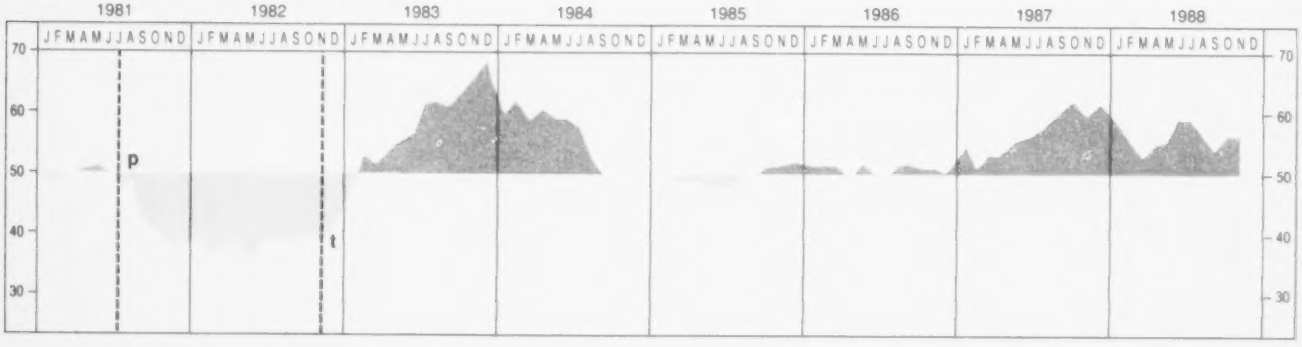
The economy registered another impressive improvement in the rate of growth in November, virtually mirroring the brisk rebound in October, say the nation's purchasing executives in their latest *Report on Business*. The November **Production** and **New Order** growth rates were solid, both only slightly lower than in October. **Employment** increased for the sixth consecutive month at the strongest rate in the last 12 months.

New **Export Orders,** although continuing to show healthy growth, exhibited signs of slowing for the fourth consecutive month. Of those members who export, 22% reported higher export orders, down from 26% in October and significantly lower than the 37.8% average of the first seven months of 1988. The 8% indicating lower export orders is unchanged from October, and represents the most to report lower in 1988.

Vendor Deliveries continued to slow but at a significantly lessened pace than all of 1988. **Inventories** increased in November, after three consecutive months of decline, when considering normal seasonal variations. **Prices** increased for the 28th consecutive month although the rate of growth is the lowest since May 1987. And, for the first time since October 1987, ethylene, a major petrochemical, was not reported up in price.

The *Report* was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "November's robust showing underscores the strength remaining in the economy as it entered the seventh year of recovery. Although displaying some signs of softening, particularly in the Export Order growth rate, the continued healthy level of New Orders, combined with a solid downtrend in the inflation rate, virtually assures a strong fourth quarter."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

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March	53.3	September	54.8
April	54.9	October	56.8
May	55.1	November	56.6
June	59.3		

The **Purchasing Managers' Index** registered 56.6% in November, virtually unchanged from 56.8% in October. The 56.6% marks the 28th consecutive month this leading indicator has exceeded 50%. A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. Bretz added, "The average for the first 11 months of 1988 is 56.2%. Past experience indicates that if the average continued for December, it would be consistent with real GNP growth of about 3.7%, less the loss resulting from the drought, and unchanged for the past five months."

Data and method of presentation

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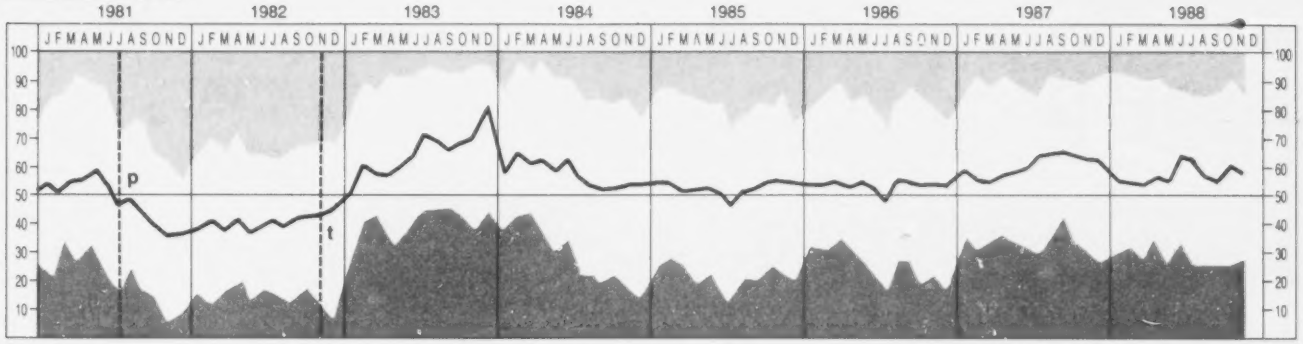
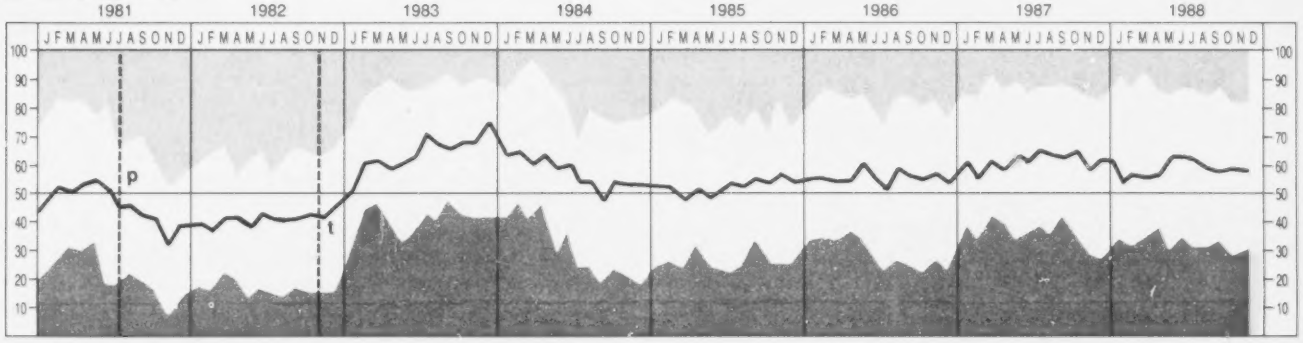
PRODUCTION



Production continued to increase in November for the 28th consecutive month. Although the index, at 58.2%, is somewhat lower than in October (60.3%), it is growing at a consistently brisk pace.

Production	%Better	%Same	%Worse	Net	Index
November	27	58	15	+12	58.2
October	26	65	9	+17	60.3
September	26	62	12	+14	56.0
August	26	60	14	+12	58.2

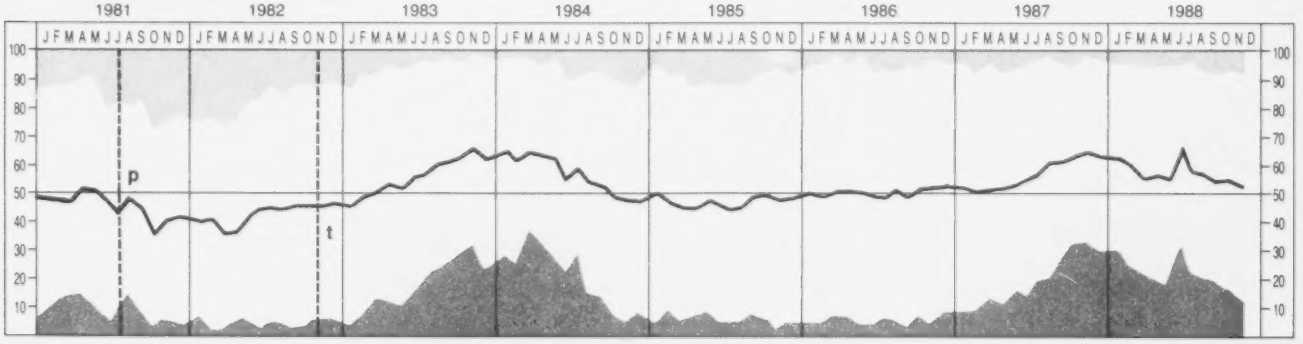
NEW ORDERS



New Orders expanded in November for the 42nd consecutive month, after taking normal seasonal variations into consideration. The index registered 58.0%, down slightly from 58.9% in October. Given the high level of New Orders, there is a good likelihood of continued Production growth in December.

New Orders	%Better	%Same	%Worse	Net	Index
November	30	52	18	+12	58.0
October	28	54	18	+10	58.9
September	34	55	11	+23	58.4
August	31	54	15	+16	59.9

VENDOR DELIVERIES



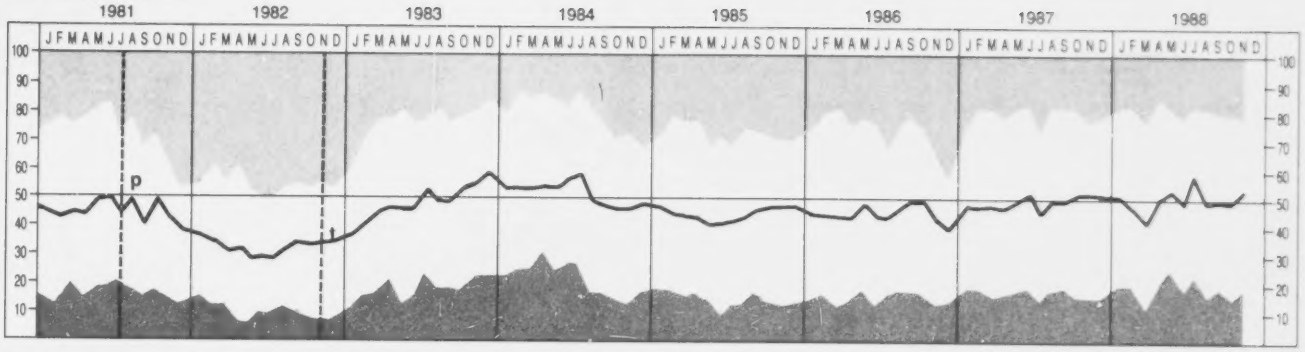
November marks the 26th consecutive month that Vendor Deliveries have slowed. However, the index dropped significantly in November to only 52.1%, the lowest rate since April 1987 (51.8%). This signals that capacity may be close to reaching parity with demand. Nevertheless, a number of commodities persistently remain in short supply.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
November	11	81	8	+ 3	52.1
October	17	77	6	+11	55.6
September	19	73	8	+11	55.0
August	20	73	7	+13	58.1

IN SHORT SUPPLY:

Aluminum (14th consecutive month), **Copper** (3rd consecutive month), **Stainless Steel** (11th consecutive month), **Bleached Paperboard** (5th consecutive month), **Polyethylene** (7th consecutive month; used heavily in making packaging materials and paper coatings), **Plastic Resins** (7th consecutive month), **Acrylic Acid** (4th time in 5 months; used in manufacturing plastics), **Caustic Soda and Soda Ash** (18th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (8th consecutive month; some easing in tightness reported; used heavily in making ethylene oxide, plastic resins and glycols), **Ethylene Oxide** (9th consecutive month), **Ethylene Derivatives** (5th time in 6 months), **Ethylene Glycol** (4th time in 6 months). NOTE: Three major ethylene and ethylene-derivative plants, previously closed because of fires, are now back in production. **Phenol** (8th consecutive month; used heavily in making phenolic resins), **Methyl Ethyl Ketone (MEK)** (7th time in 8 months; used heavily as a chemical solvent in surface coatings and making resins), **Titanium Dioxide** (16th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Rayon, Bearings** (4th consecutive month), **DRAMS** (1st time since June 1988; dynamic electronic memory devices used heavily in computers).

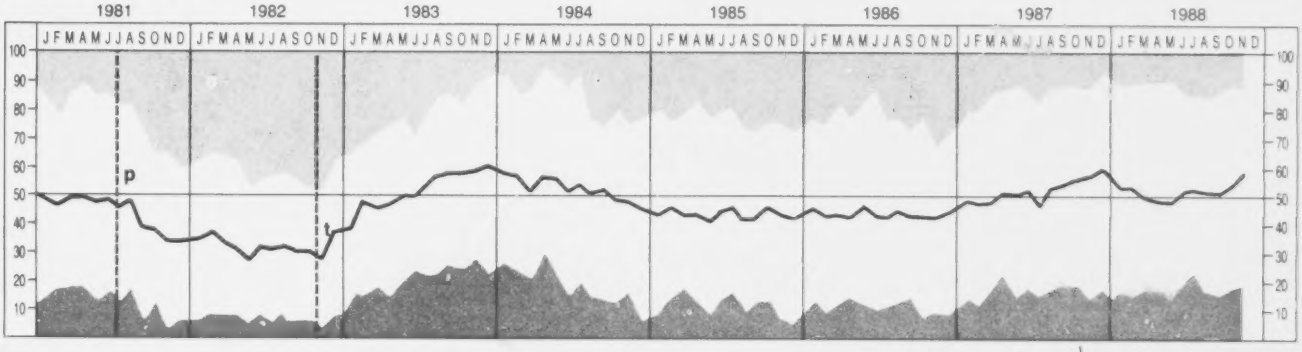
INVENTORIES



Inventories increased in November, on a seasonally adjusted basis, after declining since August. The index rose to 52.6%, up from 49.4% in October. The 52.6% represents the greatest rate of growth since July (55.1%) and suggests that some inventory building may have helped the economy in November.

Inventories	%Higher	%Same	%Lower	Net	Index
November	17	61	22	- 5	52.6
October	15	65	20	- 5	49.4
September	20	61	19	+ 1	49.6
August	18	64	18	0	48.6

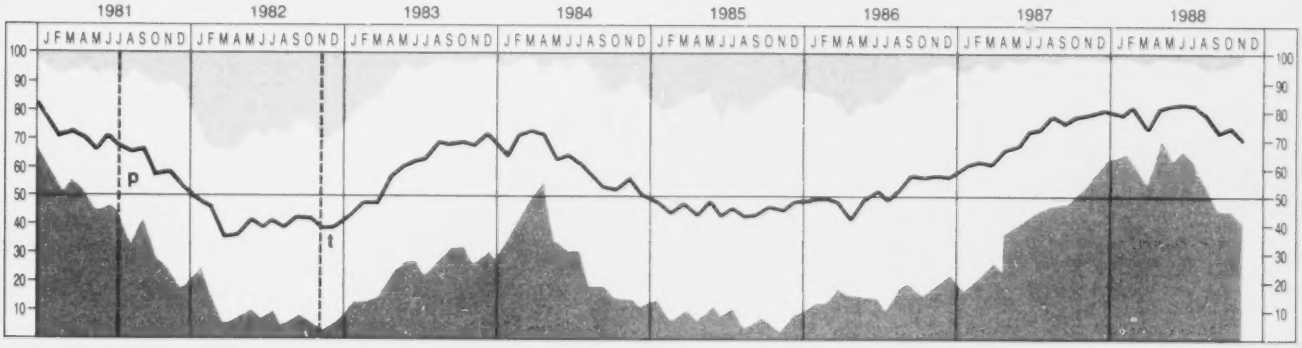
EMPLOYMENT



Employment grew sharply again in November. The index at 57.9% is up significantly from October (53.7%) and the greatest since December 1987 (59.7%). Some purchasers indicated difficulty in hiring new employees.

Employment	%Higher	%Same	%Lower	Net	Index
November	18	69	13	+ 5	57.9
October	16	72	12	+ 4	53.7
September	14	70	16	- 2	50.2
August	16	68	16	0	50.7

COMMODITY PRICES



Prices increased in November for the 28th consecutive month. However, the 70.3% index in November was down a bit from October (70.7%) and sharply lower than the 82.4% registered in June confirming a solid downtrend in the reduction of the inflation rate over the past five consecutive months.

Prices	%Higher	%Same	%Lower	Net	Index
November	40	58	2	+ 38	70.3
October	45	51	4	+ 41	70.7
September	47	49	4	+ 43	72.2
August	55	40	5	+ 50	78.7

UP IN PRICE:

Aluminum (21st time in 22 months; some reports of price decreases), **Copper** (19th time in 21 months), **Copper Products** (1st time since June 1988), **Steel** (26th time in 27 months), **Stainless Steel** (11th consecutive month), **Zinc** (10th time in 11 months; used heavily in metal alloys and as a protective coating for metals), **Castings** (4th consecutive month), **Printing Paper** (20th time in 23 months), **Paper Products** (10th consecutive month), **Bleached Paperboard** (3rd time in 5 months), **Plastic Resins** (17th time in 18 months), **Plastic Products** (18th time in 19 months), **Methanol** (10th time in 12 months; used heavily as a solvent and in synthesizing other chemicals), **Toluene** (used heavily in making explosives, dyes and benzoic acid; as a solvent in paint and gasoline additive), **Xylene** (used heavily in making benzoic acid, phthalic anhydride, polyester fibers and dyes), **Caustic Soda** (24th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene Glycols** (4th time in 5 months; used heavily in making antifreeze, brake fluid, plastic paint and ink), **Rayon, Bearings** (4th time in 5 months; anti-dumping suits reported), **Natural Gas.**

DOWN IN PRICE:

Fuel Oil (10th time in 12 months).

BUYING POLICY

Lead times for Capital Expenditures declined in November with 53% of purchasers reporting lead times of 6 months and longer, down from 57% in October and significantly lower than the exceptionally high level of 60% reported in September. Lead times for Production Materials lengthened slightly in November with 22% of members reporting lead times of 90 days and longer, up from 20% in October, but still under the 26% reported in September. Lead times for Maintenance, Repair and Operating (MRO) Supplies were shorter with 86% of purchasers indicating lead times of 30 days or less, up from 80% in October and about the same as in August and September (85%).

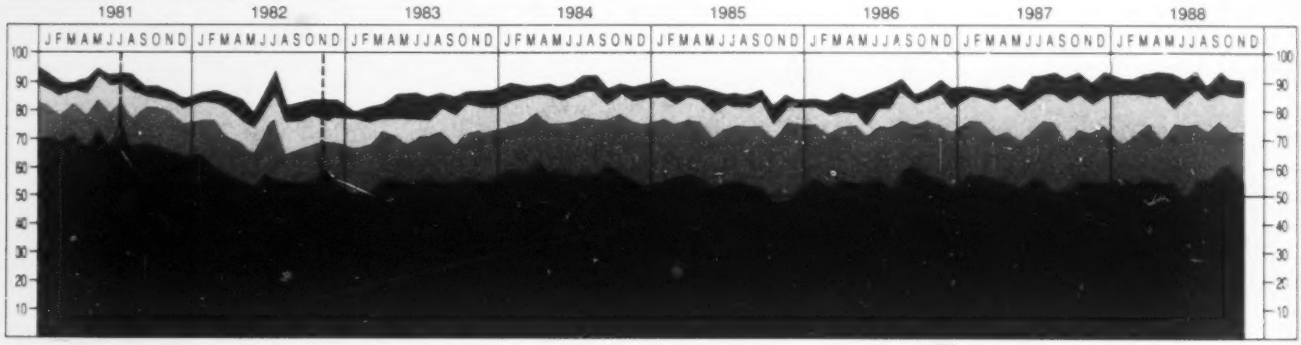
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
November	11	6	11	19	53
October	10	6	12	15	57
September	9	5	10	16	60
August	12	5	12	16	55

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
November	17	40	21	16	6
October	15	42	23	15	5
September	16	34	24	20	6
August	16	35	27	16	6

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
November	40	46	8	4	2
October	38	42	13	5	2
September	38	47	13	2	0
August	40	45	11	4	0

CAPITAL EXPENDITURES



Commodity Report
November, 1988

ENERGY
Prepared by the NAPM Energy Committee. Chair: Howard T. Perley, C.P.M., International Paper, Memphis, TN.

COAL: Pressure is on coal prices to drop, due to lower oil prices and mines with over capacity. However costs have been affected by rising barge rates.

ELECTRICITY: Power costs are increasing for hydroelectric producers due to poor water conditions. Natural gas prices to utilities are also higher. Electric power prices for nuclear and coal generators, however, will increase less than the rate of inflation. Consult with local utilities for opportunities to reduce electricity and conservation costs.

NATURAL GAS: A significant increase in gas prices may result from the distribution of penalties accumulated by the "take or pay" problem which developed in the 1970's.

PETROLEUM PRODUCTS: Crude oil prices should remain near $15 a barrel, based on normal weather conditions and expected OPEC production and shipping levels. Residual fuel prices should remain soft through 1988, but supply may be a problem in some areas.

PACKAGING
Prepared by the NAPM Packaging Committee. Chair: Carl Dirkse, C.P.M., S.C. Johnson and Son, Inc., Racine, WI.

The packaging markets continue to be strong, with growth due to exporting. No surplus supply or decreasing prices are reported. Shipments of rigid containers are expected to rise 5.4% in 1988. Packaging disposal continues to be a concern, particularly with plastics.

METAL CANS: Supply adequate, some prices increasing. Aluminum can prices up, which may be modified as buyers switch to steel. Recycling of both continues.

FIBRE CANS AND FIBRE DRUMS: Supply adequate, some prices up due to board increases.

GLASS: Some price increases; supply adequate, with some tightness in 3rd quarter. Continued losses to plastic.

MOLDED PLASTICS AND FILMS: Shortage of resin has caused prices to increase, though supply and prices are improving now.

LAMINATED STOCK: Tight supply and increased prices due to resin and aluminum foil shortages are beginning to ease.

METAL DRUMS: Adequate supply, some prices up due to steel increases.

FOLDING CARTONS: Supply tight (esp. SBS), long leadtimes, increasing prices. Heavy exports. Two plant closures in California could affect availability.

CORRUGATED: Availability tight to adequate, prices increasing, though future direction uncertain. Mill operating rates high, exports a factor.

BAGS: Supply tight and prices increasing due to resin and paper shortages.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602/752-NAPM (752-6276). Telecopier: 602/752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

The next issue of *REPORT ON BUSINESS* will be available January 3, 1989.

1/9/89 A6910-1

National Association of Purchasing Management®

Report On Business®
January 3, 1989
Volume 7, Number 1

Vigorous Growth Continues: Index Rises to 58.1%

Production and New Order Growth Rate Greatest Since July

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

December Report

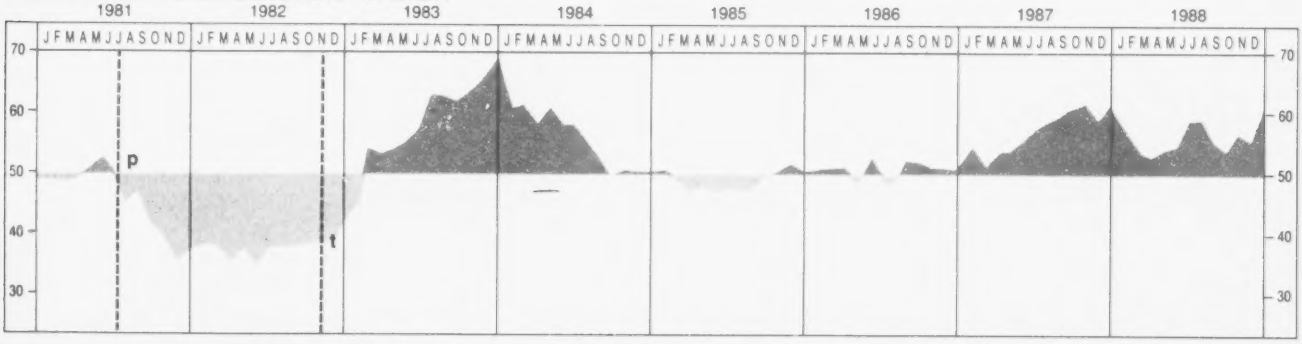
The economy closed the year with vigorous growth, say the nation's purchasing executives in their latest ***Report on Business.*** **Production** and **New Orders** growth rates rose in December to their highest levels since July. The **Employment** growth rate slowed only slightly, and except for November, is the greatest since last December.

New **Export Orders,** after growing at a slower rate for the past four months, increased at the highest rate since July. Of those members who export, 30% reported higher export orders, up from 22% in November. The 6% indicating lower export orders is down from 8% reported last month.

Vendor Deliveries continued to slow in December, reflecting the seasonally strong growth in Production. **Inventories** also increased, but at a lesser rate than in November. The rate of growth in **Prices** was lower for the sixth consecutive month and is at its lowest level since May 1987.

The *Report* was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "December exited the 1988 economy like a lion. The continued robust growth capped the final quarter at what could be the strongest growth rate of the year. Except for a solid downtrend in the rate of inflation, there were few signs of the anticipated slowing in this, the seventh year of the recovery."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

January	57.4	July	59.0
February	54.9	August	56.2
March	53.3	September	54.8
April	54.9	October	56.8
May	55.1	November	56.6
June	59.3	December	58.1

The **Purchasing Managers' Index** increased to 58.1% in December, respectably higher than the 56.6% in November. The 58.1% was the highest reading since July (59.0%) and marks the 29th consecutive month this leading indicator has exceeded 50%. A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. Bretz added, "The average for all of 1988 is 56.4%. Based on past experience, this is consistent with real GNP growth of about 3.7% for 1988, less the loss resulting from the drought, and unchanged for the last six months."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state; and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

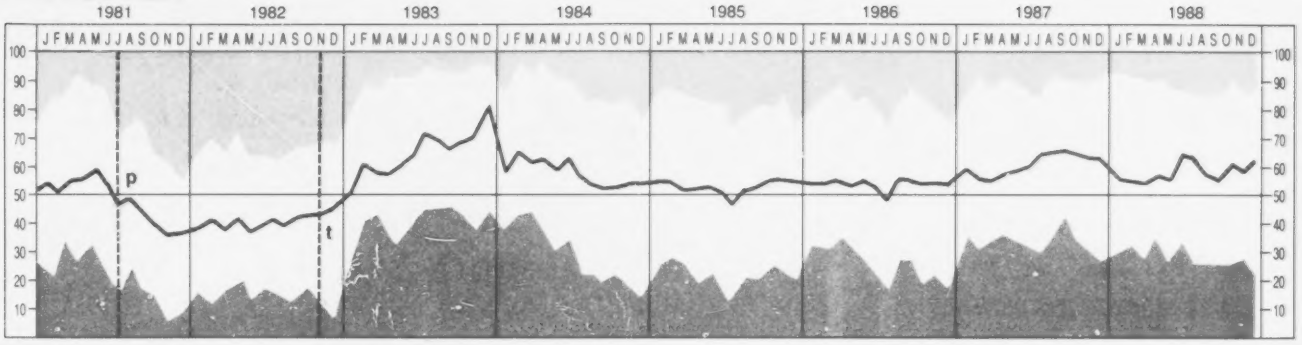
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

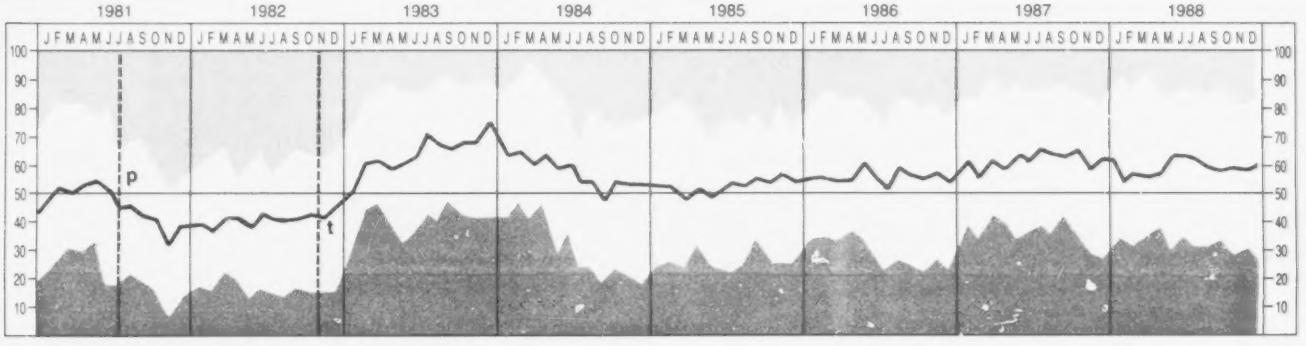
PRODUCTION



December marked the 29th consecutive month in which Production increased. The seasonally adjusted index advanced at a vigorous pace to 61.3%, up from 58.2% in November and the highest registered since July (62.7%).

Production	%Better	%Same	%Worse	Net	Index
December	22	65	13	+ 9	61.3
November	27	58	15	+12	58.2
October	26	65	9	+17	60.3
September	26	62	12	+14	56.0

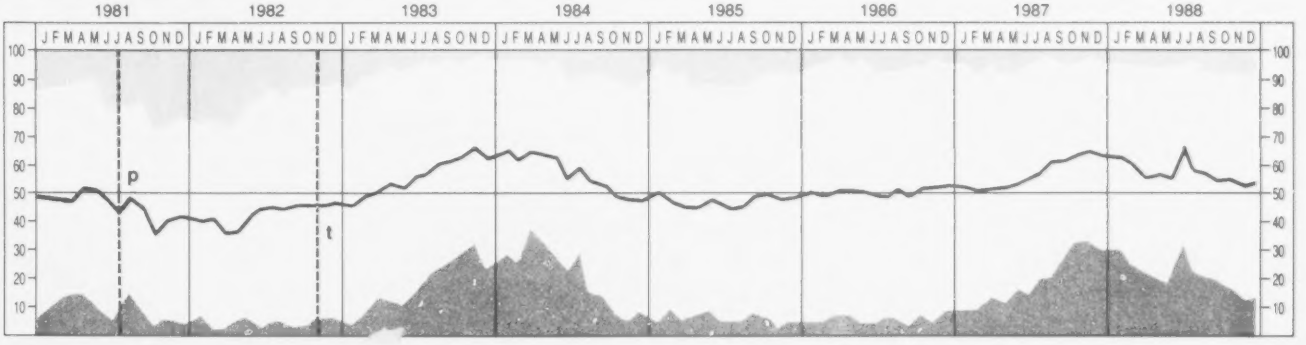
NEW ORDERS



New Orders expanded in December for the 43rd consecutive month, when considering normal seasonal variations. The index rose to 60.1%, a brisk increase from 58.0% in November, and the highest growth rate since July (62.1%). This high level of New Orders, buoyed by the pick-up in the growth of Export Orders in December, suggests continued growth in Production into 1989.

New Orders	%Better	%Same	%Worse	Net	Index
December	24	59	17	+ 7	60.1
November	30	52	18	+12	58.0
October	28	54	18	+10	58.9
September	34	55	11	+23	58.4

VENDOR DELIVERIES



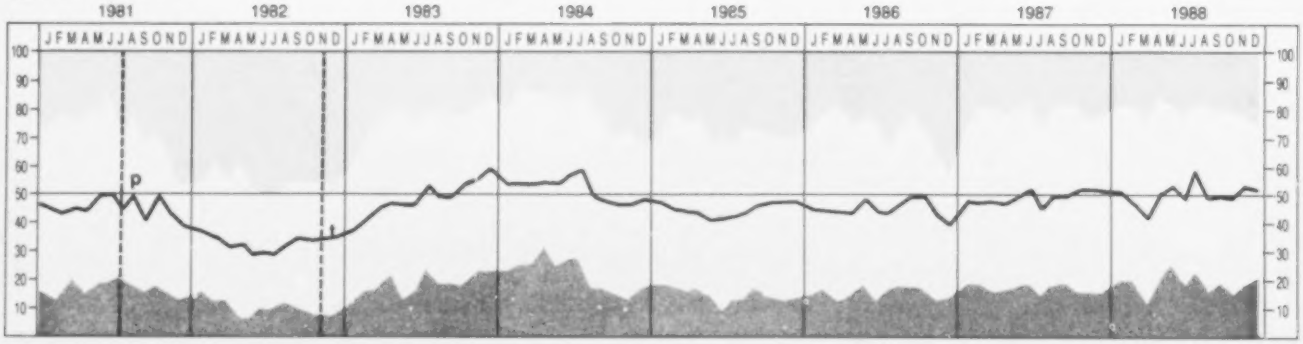
Vendor Deliveries slowed again in De[illegible]ber for the 27th consecutive month. The rate of slowing increased in Dece[illegible]ber (54.0%) from 52.1% in November, when it fell from 55.6% in October. Dece[illegible]ber's rebound confirms the persistent strong growth in the economy.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
December	15	77	8	+ 7	54.0
November	11	81	8	+ 3	52.1
October	17	77	6	+11	55.6
September	19	73	8	+11	55.0

IN SHORT SUPPLY:

Aluminum (15th consecutive month), **Copper** (4th consecutive month), **Steel** (18th time in 20 months), **Stainless Steel** (12th consecutive month), **Steel Tubing** (3rd time in 5 months), **Castings** (2nd time in 4 months), **Bleached Paperboard** (6th consecutive month), **Printing Paper** (1st time since August 1988), **Polyethylene** (8th consecutive month; used heavily in making packaging materials and paper coatings), **Acrylic Acid** (5th time in 6 months; used in manufacturing plastics), **Caustic Soda/Soda Ash** (19th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene Oxide** (10th consecutive month), **Ethylene Derivatives** (6th time in 7 months), **Ethylene Glycol** (5th time in 7 months), **Phenol** (9th consecutive month; used heavily in making phenolic resins), **Titanium Dioxide** (17th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Rayon** (2nd consecutive month), **Bearings** (5th consecutive month), **Electrical Parts**.

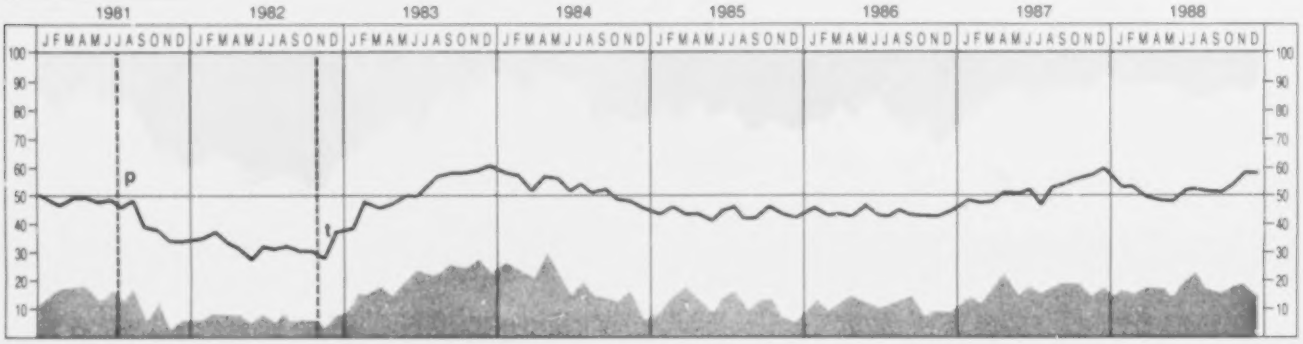
INVENTORIES



Inventories increased in December, on a seasonally adjusted basis, for the second consecutive month. The index, at 51.4%, was up slightly from 52.6% last month. This suggests that some modest inventory buildup may have occurred to selectively hedge against announced January 1 price increases and alleviate persistent shortages in certain commodities.

Inventories	%Higher	%Same	%Lower	Net	Index
December	20	55	25	-5	51.4
November	17	61	22	-5	52.6
October	15	65	20	-5	49.4
September	20	61	19	+1	49.6

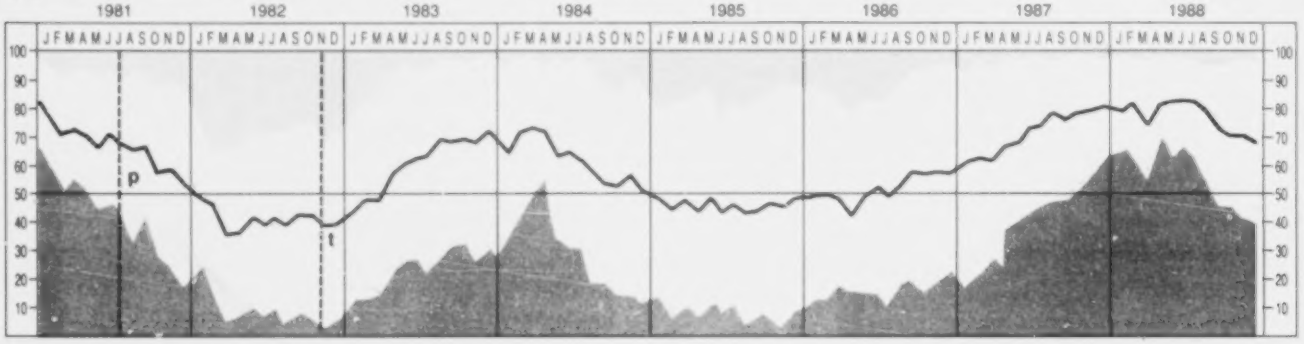
EMPLOYMENT



Employment increased again in December for the seventh consecutive month. The index, at 57.5%, was only slightly lower than in November (57.9%), and except for last month, is the greatest since last December (59.7%).

Employment	%Higher	%Same	%Lower	Net	Index
December	14	75	11	+3	57.5
November	18	69	13	+5	57.9
October	16	72	12	+4	53.7
September	14	70	16	-2	50.2

COMMODITY PRICES



December marked the 29th consecutive month of price increases. However, the good news is that the rate of growth in prices declined for the sixth consecutive month. The index (68.4%) is the lowest since May 1987 (67.8%), and confirms a solid downtrend in the rate of inflation since mid year.

Prices	%Higher	%Same	%Lower	Net	Index
December	39	58	3	+36	68.4
November	40	58	2	+38	70.3
October	45	51	4	+41	70.7
September	47	49	4	+43	72.2

UP IN PRICE:

Brass, Copper (20th time in 22 months), **Lead** (used heavily in making paints, petroleum, pipe and batteries), **Nickel** (7th time in 10 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (27th time in 28 months), **Zinc** (11th time in 12 months; used heavily in metal alloys and as a protective coating for metals), **Castings** (5th consecutive month), **Corrugated Shipping Containers** (1st time since August 1988), **Printing Paper** (21st time in 24 months), **Wood Pulp** (used in making all grades of paper and linerboard), **Polyethylene** (17th time in 19 months; used heavily in making packaging material and paper coatings), **Plastic Products** (19th time in 20 months), **Amines** (used as an emulsifier, fungicide, in making rubber, petroleum, resins and dyes), **Benzene** (used heavily in making medicinal chemicals, dyes, varnishes, lacquers and resins), **Caustic Soda**, **Soda Ash** (25th consecutive month; used heavily in paper making, petroleum refining and soap-making), **Ethylene Glycol** (5th time in 6 months; used heavily in making antifreeze, brake fluid, plastic paint and ink), **Glycerine** (used in various ways: sweetener in confectionaries, cosmetics, soaps and tobacco), **Menthol** (used heavily in making confectionaries, liqueurs, cigarettes, perfumes and cough drops), **Phenol** (3rd time in 6 months), **Phthalic Anhydride** (used heavily in making artificial resins, benzoic acid and Phthalates), **Toluene** (2nd consecutive month; used heavily in making explosives, dyes and benzoic acid; as a solvent in paint and gasoline additive), **Xylene** (used heavily in making benzoic acid, phthalic anhydride, polyester fibers and dyes), **Polyester, Rayon, Bearings** (5th time in 6 months), **Natural Gas** (3rd time in 4 months), **Fuel Oil** (1st time after reported lower priced in 10 of past 12 months).

DOWN IN PRICE:

Vegetable Oil & Shortening (used heavily in processed foods).

BUYING POLICY

Lead times for Production Materials and Capital Expenditures lengthened in December, mirroring the vigorous growth reported in Production, New Orders and Vendor Deliveries. Members indicating lead times of 30 days or less declined to 49%, down from 57% of the previous two months and the lowest since March 1988 (47%). Members reporting lead times of 6 months and longer for Capital Expenditures rose to 56%, up from 53% in November. Lead times also widened for Maintenance, Repair and Operating (MRO) Supplies, with 82% of purchasers indicating lead times of 30 days or less, down from 86% last month.

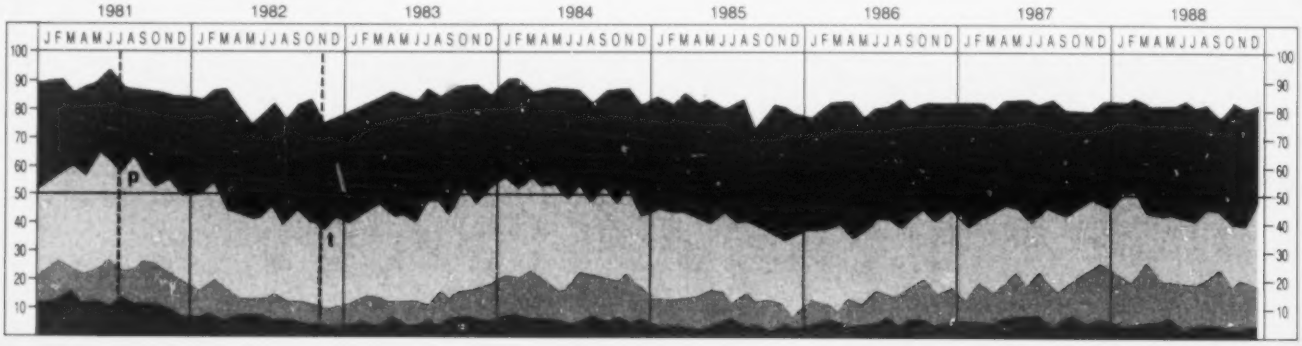
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
December	16	33	30	15	6
November	17	40	21	16	6
October	15	42	23	15	5
September	16	34	24	20	6

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
December	9	5	14	16	56
November	11	6	11	19	53
October	10	6	12	15	57
September	9	5	10	16	60

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
December	34	48	13	4	1
November	40	46	8	4	2
October	38	42	13	5	2
September	38	47	13	2	0

PRODUCTION MATERIALS



Commodity Report
December, 1988

WOOD PRODUCTS

Prepared by the NAPM Wood Products Committee. Chair: Sam Craven, Pope and Talbot, Inc., Portland, OR.

GENERAL: New construction and labor strikes on the West Coast kept operating mills near capacity during 1988. Rising interest rates may cause a mild downturn of demand and prices in 1989.

SOFTWOOD LUMBER: Price and supply remain firm. Look for slight easing of prices in the first and second quarter of 1989. Timber prices rising as available wood supply tightens. The Canadian lumber tariff and weakening of the U.S. dollar has helped keep the price of Canadian lumber up. Exports are steady with the prices slightly lower as supply exceeds demand. The market should continue steady as long as the dollar is low. The secondary market (furniture and remodeling) continues steady and should remain so through 1989.

HARDWOOD — VENEERS: Price and demand were steady through most of the year. The furniture/flooring and veneer markets were strong. Expect the market and prices to hold steady for first half of 1989.

BY-PRODUCTS: Chip prices remain strong with no decline expected in the near future. The foreign and domestic pulp markets are expected to remain strong through the year.

NON-FERROUS METALS

Prepared by the NAPM Non-Ferrous Metals Committee. Chair: Sharon Sinke, C.P.M., C.L. Frost Inc., Grand Rapids, MI.

LEAD: The price of lead is currently split $0.395–0.42/lb., with one primary producer holding at $0.395 and three at $0.42. Expect prices to drop early in 1989 to $0.33–35 range, as demand decreases from battery manufacturers. U.S. supplies have been tight this fall because of production problems and high demand. Inventories dropped to a record low of 5100 tons last fall. Supply will increase in 1989 as one smelter is reactivated and others increase capacity. Also, two U.S. primary producers may expand into secondary production, and a major secondary producer plans to double capacity over the next five years by lead recovery from scrap batteries. Overall, supply should begin to exceed demand, causing prices to soften.

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The next issue of *REPORT ON BUSINESS* will be available February 6, 1989.

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National Association of Purchasing Management®

Report On Business®
February 6, 1989
Volume 7, Number 2

Index Falls to 53.2%

New Export Order Growth Continues

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

January Report

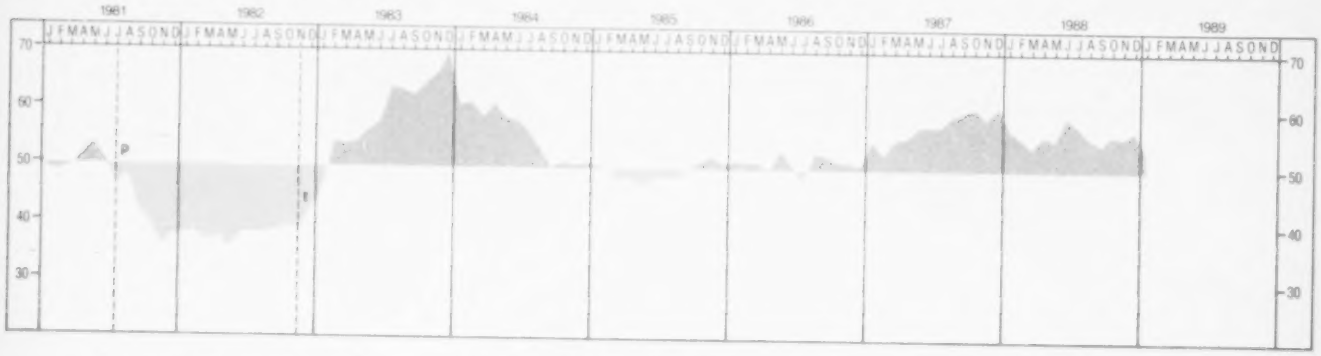
The economy continued to grow in January, but at a significantly slower rate than in December, say the nation's purchasing executives in their latest ***Report on Business.*** The rate of growth in **Production** slipped to the lowest level since September 1988 and the **New Order** growth rate fell to its lowest in over two years. **Inventories** declined sharply in January after increasing in November and December.

New Export Orders continued to expand in January, maintaining the brisk pace of growth in December. Of those members who export, 28% reported higher export orders, down only slightly from 30% in December. The 5% reporting lower export orders is also down slightly from the 6% reported last month.

Employment, which had increased sharply for the past seven months, just barely registered an increase in January. **Vendor Deliveries** continued to slow but at a lesser pace than most of last year. The rate of growth in price increases rose in January after registering six consecutive months of declining growth.

The ***Report*** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "If December exited 1988 like a lion, January entered 1989 like a lamb. Although still growing at a healthy rate, the economy may have signaled the first signs of the long anticipated slowing."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

January	57.3	August	55.7
February	55.7	September	54.7
March	54.0	October	56.2
April	56.0	November	55.9
May	55.5	December	57.3
June	59.2	January '89	53.2
July	57.9		

The **Purchasing Managers' Index** fell sharply in January to 53.2% from 57.3% in December. **Both numbers reflect an update by the U.S. Department of Commerce of the seasonal adjustment factors used to calculate the Purchasing Managers' Indexes as well as the diffusion indexes for all other indicators included in the January *Report on Business*.**

Bretz added, "Although the index at 53.2% is significantly lower than December, it still marks the 30th consecutive month this leading indicator has exceeded 50%. However, the 53.2% is the lowest registered in two years (52.6% in February 1987)." A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining.

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

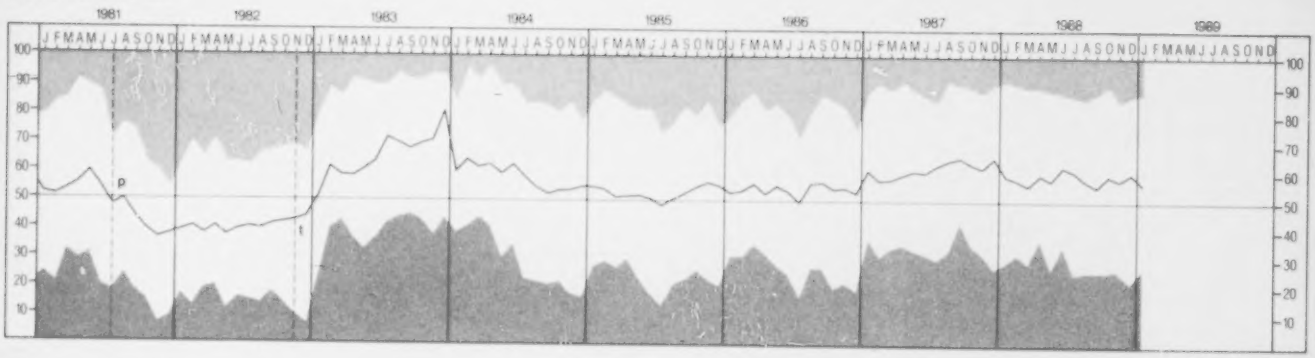
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response,
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries),
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("P" — July 1981) and trough ("T" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

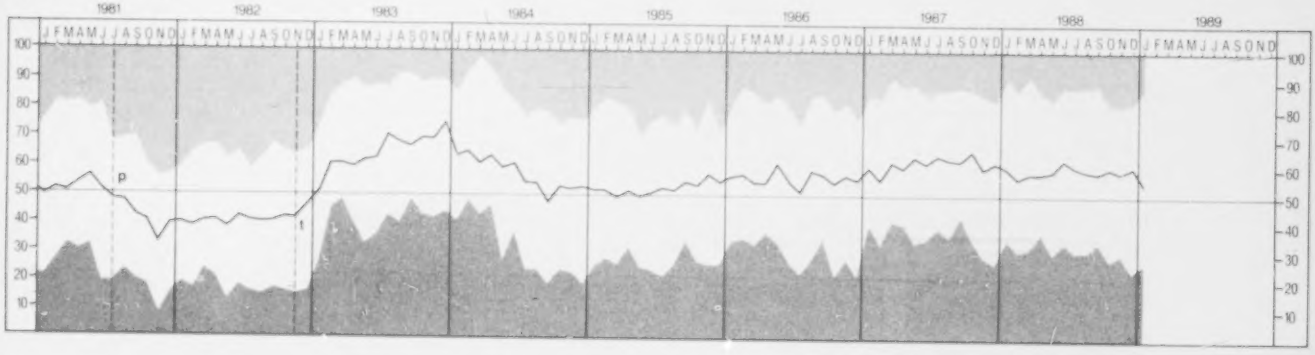
PRODUCTION



January was the 30th consecutive month in which Production increased. However, the seasonally adjusted Production index fell to 56.2%, significantly lower than the vigorous pace registered in December (60.0%) and the lowest since September (55.5%).

Production	%Better	%Same	%Worse	Net	Index
January	27	61	12	+15	56.2
December	22	65	13	+ 9	60.0
November	27	58	15	+12	57.8
October	26	65	9	+17	59.1

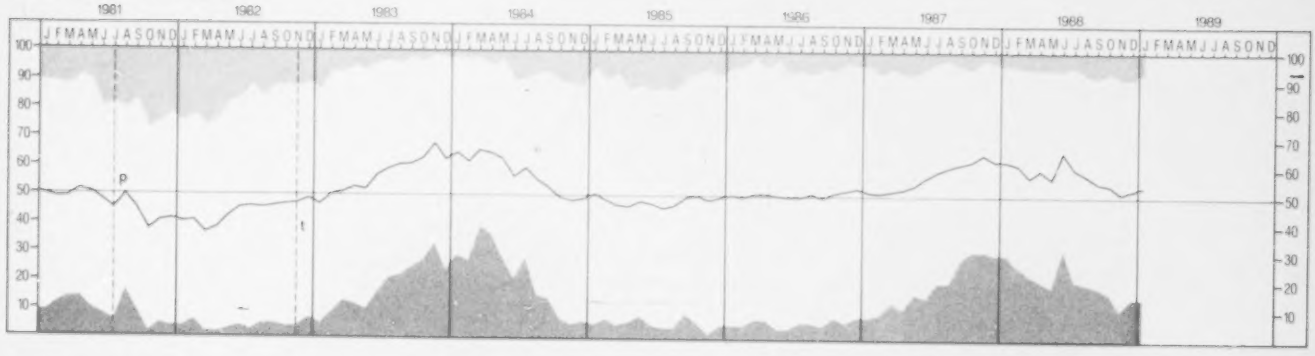
NEW ORDERS



New Orders increased in January for the 44th consecutive month. However, the New Orders index declined meaningfully to 54.5% from 60.0% in December, the lowest since October 1986 (also 54.5%). The growth rate of New Export Orders, a major contributor to the excellent economy last year, continued to show brisk growth.

New Orders	%Better	%Same	%Worse	Net	Index
January	27	51	12	+15	54.5
December	24	59	17	+ 7	60.0
November	30	52	18	+12	58.4
October	28	54	18	+10	58.9

VENDOR DELIVERIES



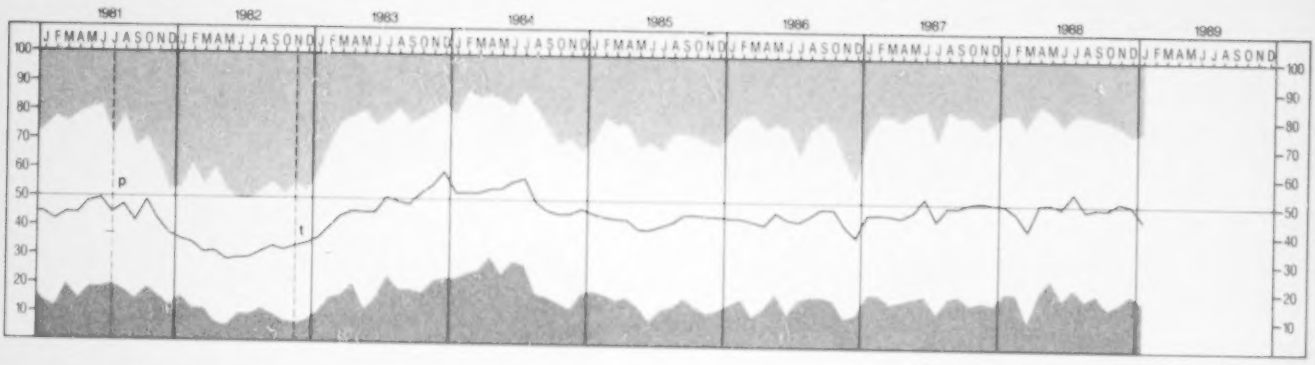
Vendor Deliveries slowed for the 28th consecutive month. Although the rate of slowing, a sign of strength in the economy, has increased slightly for the third consecutive month, those rates have lessened considerably from the first three quarters of 1988 and may be signaling a growing parity between demands and production capacity.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
January	15	79	6	+ 9	54.0
December	15	77	8	+ 7	52.6
November	11	81	8	+ 3	51.6
October	17	77	6	+11	54.6

IN SHORT SUPPLY:

Aluminum (16th consecutive month), **Copper** (5th consecutive month), **Nickel** (1st time since September; used heavily in making stainless steel, plating metals and batteries), **Steel** (19th time in 21 months), **Zinc** (1st time since May; used heavily in metal alloys and as a protective coating for metals), **Bleached Paperboard** (7th consecutive month), **Printing Paper** (2nd consecutive month), **Plastic Resins** (8th time in 9 months), **Polyethylene** (9th consecutive month; used heavily in making packaging materials and paper coatings), **Fiber Glass, Acrylic Acid** (6th time in 7 months; used in manufacturing plastics), **Caustic Soda/Soda Ash** (20th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (9th time in 10 months; used heavily in making ethylene oxide, plastic resins and glycols), **Ethylene Oxide** (11th consecutive month), **Ethylene Glycol** (6th time in 8 months), **Phenol** (10th consecutive month; used heavily in making phenolic resins), **Titanium Dioxide** (18th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Rayon** (3rd consecutive month), **Bearings** (6th consecutive month), **DRAMs** (2nd time in 3 months; dynamic electronic memory devices used heavily in computers).

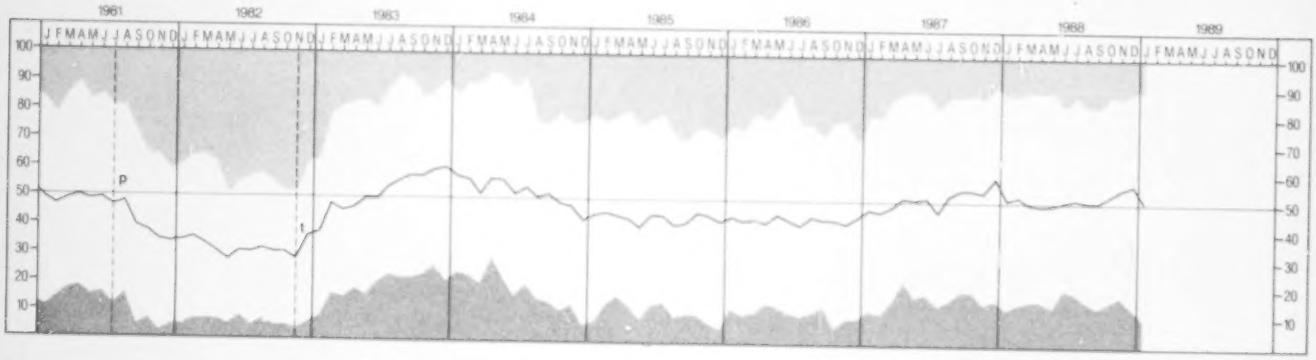
INVENTORIES



Inventories declined in January for the first time since October, after considering normal seasonal variations. The Inventories index at 45.5%, was down sharply from 50.8% in December and is the lowest since March 1988 (41.8%). The decline also suggests that the modest inventory buildup in December, to selectively hedge against announced January price increases, was worked down in January.

Inventories	%Higher	%Same	%Lower	Net	Index
January	17	59	24	−7	45.5
December	20	55	25	−5	50.8
November	17	61	22	−5	51.8
October	15	65	20	−5	49.5

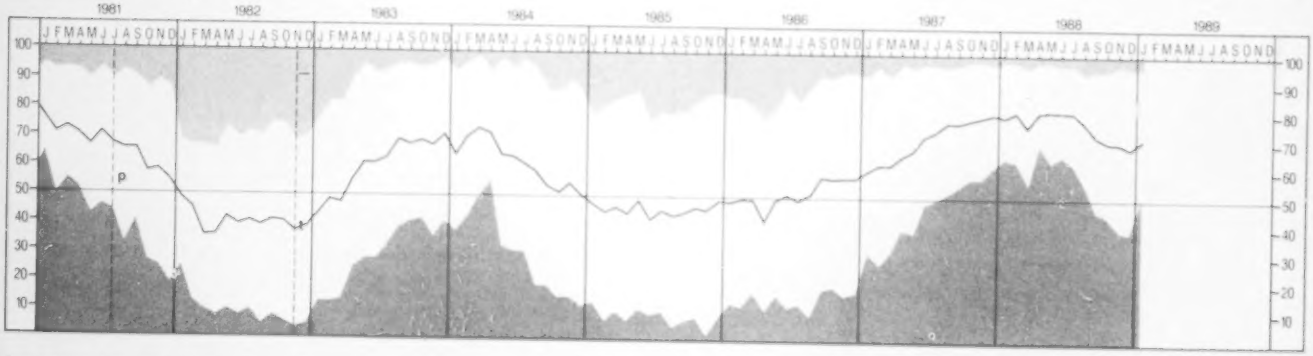
EMPLOYMENT



Employment rose in January for the eighth consecutive month. But the Employment index (50.5%) is the lowest since May 1988 (49.4%). This lower growth rate may well be another precursor of slowing growth in the economy.

Employment	%Higher	%Same	%Lower	Net	Index
January	10	80	10	0	50.5
December	14	75	11	+3	56.8
November	18	69	13	+5	55.2
October	16	72	12	+4	53.0

COMMODITY PRICES



January marked the 30th consecutive month of price increases. After six consecutive months of declining rate of growth in price increases, the trend reversed itself. The Price index increased to 71.6%, up from 68.6% in December. January, more than any other month of the year, is the time for annual price increases. Nevertheless, the number of commodities reported as higher priced is significantly less than reported over the past year.

Prices	%Higher	%Same	%Lower	Net	Index
January	51	46	3	+48	71.6
December	39	58	3	+36	68.6
November	40	58	2	+38	70.2
October	45	51	4	+41	70.4

UP IN PRICE:

Aluminum (22nd time in 24 months; some reports of price decreases), **Lead** (2nd consecutive month; used heavily in making paints, petroleum, pipe and batteries), **Nickel** (8th time in 11 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (28th time in 29 months), **Zinc** (12th time in 13 months; used heavily in metal alloys and as a protective coating for metals), **Bearings** (6th time in 7 months), **Castings** (6th consecutive month), **Printing Paper** (22nd time in 25 months), **Polyethylene** (18th time in 20 months; used heavily in making packaging material and paper coatings), **Plastic Products** (20th time in 21 months), **Plastic Resins** (17th time in 18 months; used heavily in making phenolic resins), **Rubber, Fiber Glass, Benzene** (2nd consecutive month; used heavily in making medicinal chemicals, dyes, varnishes, lacquers and resins), **Caustic Soda/Soda Ash** (26th consecutive month), **Phenol** (4th time in 7 months), **Polyester** (2nd consecutive month), **Rayon** (2nd time in 3 months), **Natural Gas** (4th time in 5 months), **Fuel Oil** (2nd consecutive month).

DOWN IN PRICE:

Methanol (reported up in price in November for 10th time in 12 months; used heavily as a solvent and in synthesizing other chemicals).

BUYING POLICY

In general, lead times declined in January. Members reporting lead times in the meaningful 6 months and longer category for Capital Expenditures rose to 57%, up only slightly from 56% in December. However, lead times for non-custom Capital Expenditures decreased with 20% of members reporting lead times of 30 days and less, up considerably from 14% last month and the most since May 1987 (also 20%). Lead times for Production Materials declined with 84% of purchasers reporting lead times of 60 days or less, up from 79% last month, and the most since January 1987 (also 84%). Lead times for Maintenance, Repair and Operating (MRO) Supplies were also shorter, with 85% of members indicating lead times of 30 days or less, up from 82% in December.

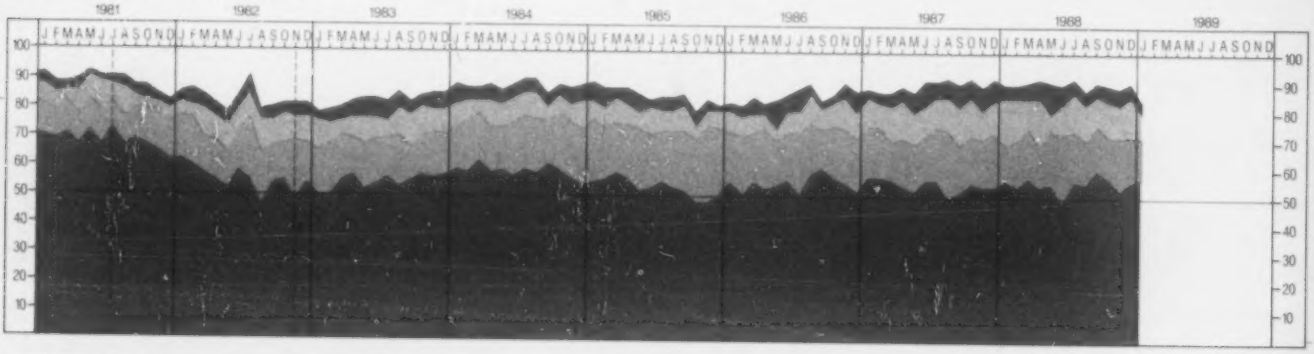
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
January	16	4	8	15	57
December	9	5	14	16	56
November	11	6	11	19	53
October	10	8	12	15	57

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
January	16	37	31	11	5
December	16	33	30	15	6
November	17	40	21	16	6
October	15	42	23	15	5

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
January	38	47	11	3	1
December	34	48	13	4	1
November	40	46	8	4	2
October	38	42	13	5	2

CAPITAL EXPENDITURES



Commodity Report
January, 1989

PACKAGING
Prepared by the NAPM Packaging Committee. Chair: Carl Dirkse, C.P.M., S.C. Johnson & Son, Inc., Racine, WI.

GENERAL: The packaging markets are beginning to stabilize somewhat, both in price and availability. The area causing the most problems for buyers is folding cartons.

METAL CANS: Supply is adequate, but prices are increasing due to steel price increases.

FIBRE CANS: Very few availability problems. A few price increases are reported due to raw material increases.

GLASS: Prices are quite stable; supply is adequate; business is still being lost to plastic.

MOLDED PLASTICS: Resin availability has improved somewhat. Price increases are slowing down and there is some talk of decreases on polypropylene. Polyethylene is still a sellers' market. Molders are busy, but capacity is available. Recyclable and degradable plastics are becoming important issues.

FILMS: Supply is tight, but improving somewhat. Fewer price increases are anticipated in 1989.

LAMINATED STOCK: Supply is adequate to tight. Price increases are being experienced due to raw material increases.

METAL DRUMS: Supply continues to be adequate. Some prices are going up due to steel increases.

FIBRE DRUMS: Supply is adequate with some price increase due to board increases.

FOLDING CARTONS: This has been a sleepy market for years. But now supply is very tight, lead times lengthening, and prices are increasing. Tight supply and increasing prices are forecast for 1989.

CORRUGATED: As this is written, the Yellow Sheet still shows $410/ton and no one seems to be following Stone's lead on a price increase. Buyers are resisting; one even talks of a decrease. Supply is adequate.

BAGS: The picture varies by type of bag, but supply is tight to adequate, and some prices are increasing. Degradable plastic bags are entering the market. Plastic bags are being outlawed in some areas.

PAPER PRODUCTS
Prepared by the NAPM Paper Committee. Chair: Glenn Farber, C.P.M., Vanier Graphics Corp., Santee, CA.

GENERAL: Estimates place 1988 as another record production year at approximately 76.8MM tons — 3.2% above 1987. Mill profitability is skyrocketing with a jump of almost 50% in the third quarter.

NEWSPRINT: Readily available now and for the next 6 months, although a price increase is likely. Lead times are steady. There is some discounting now. Consumption is almost flat. Capacity will increase by 2MM tons in N.A. in the next 3 years.

UNCOATED GROUNDWOOD: Availability is normal with no allocation, which is likely to continue for 6 months. No change is occurring in deliveries or inventories, but prices are up.

COATED GROUNDWOOD: Grade is very tight and allocated. Deliveries and lead times are steady. Prices are steady now but may be up within 6 months. Imports are heavy.

UNCOATED FREE SHEET: Deliveries are normal and steady; some are on allocation, others not. Availability should increase as the year wears on. Inventories are steady. There will likely be one more try for a full price increase, with discounting later. Almost 1.4MM tons will be added to capacity in the next 3 years. Reprographic grades are very tight.

COATED FREE SHEET: All coateds are very tight and likely to remain so. The new supply is up 12% from last year. There will be little added U.S. capacity in the near future. Imports are up 32%. No change in lead times. Prices are up on some grades and steady on others. Feelings for the future are mixed.

BLEACHED BRISTOLS: Supply is normal to tight, with no change likely for 6 months. Responses are mixed on lead times. Inventories are decreasing. Prices are increasing with more to come. Availability of some items is unstable.

PAPERBOARD/LINERBOARD: Grade is very tight and allocated. There is no new capacity and lead times are long. No change in inventories. Paperboard prices are increasing. The Jan. 1 linerboard increase failed; the future is unclear.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602/752-NAPM (752-6276). Telecopier: 602/752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

The next issue of *REPORT ON BUSINESS* will be available March 6, 1989.

AGARD
3/10/89

National Association of Purchasing Management®

Report On Business®

March 6, 1989
Volume 7, Number 3

Economic Growth Rate Slows

Index Inches Lower to 53%

Price Growth Eases

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

February Report

The economy continued to expand in February, but at the same slowing growth rate exhibited in January, say the nation's purchasing executives in their latest ***Report on Business.*** Although the rate of growth in **New Orders** increased slightly over January, it is still at its lowest in two years. The rate of **Production** growth registered its second consecutive sharp decrease to its lowest since December 1986. **Employment** declined in February after eight consecutive months of increase.

New Export Orders, although continuing to grow, increased at a markedly lower rate of growth. The 69.5% of members who indicated in February that they export is consistent with the 14-month average of 69.3%. Of those who export, 22% reported higher export orders in February, down significantly from 28% in January. The 6% who reported lower export orders is up slightly from the 5% reporting lower in January.

Vendor Deliveries were slower, but again at a lesser pace than during most of the past two years. **Inventories** declined in February for the second consecutive month, although at a much lesser rate than last month. The rate of growth in price increases declined sharply in February and is the lowest since April 1987.

The ***Report*** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The economy appears to have entered a period of slower and more moderate growth than the robust pace of last year. This, coupled with decreased employment and a declining inflation trend, could be signalling a more subdued and healthier economy for this stage of the economic recovery."

PURCHASING MANAGERS' INDEX

Purchasing Managers' Index

January	57.3	August	55.7
February	55.7	September	54.7
March	54.0	October	56.2
April	56.0	November	55.9
May	55.5	December	57.3
June	59.2	January '89	53.2
July	57.9	February '89	53.0

The **Purchasing Managers' Index** edged slightly lower in February to 53.0% from 53.2% in January. Although this is the 31st consecutive month the index has exceeded 50%, it is also the lowest reading in over two years (52.6% in February 1987) for this leading indicator.

A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining.

Data and method of presentation

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Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

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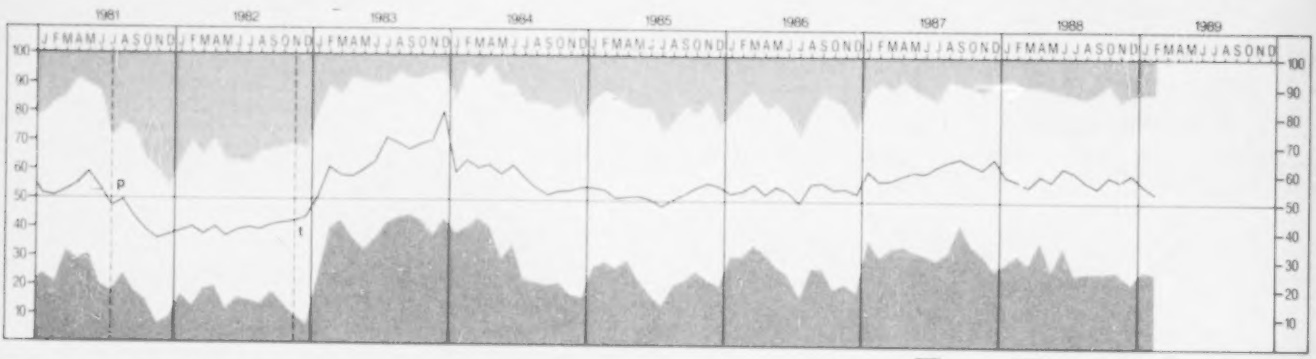
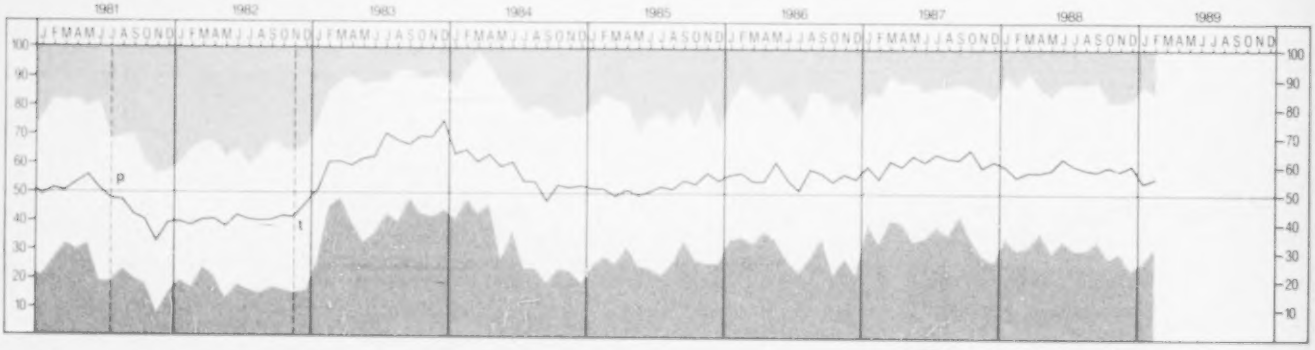
PRODUCTION



February marked the 31st consecutive month in which Production increased. However, the Production index fell to 53.7% from 56.2% last month and 60.0% in December. This is the lowest reported since December 1986 (53.0%). Some members reported that weather-related problems contributed to lower production in February.

Production	%Better	%Same	%Worse	Net	Index
February	26	62	12	+14	53.7
January	27	61	12	+15	56.2
December	22	65	13	+ 9	60.0
November	27	58	15	+12	57.8

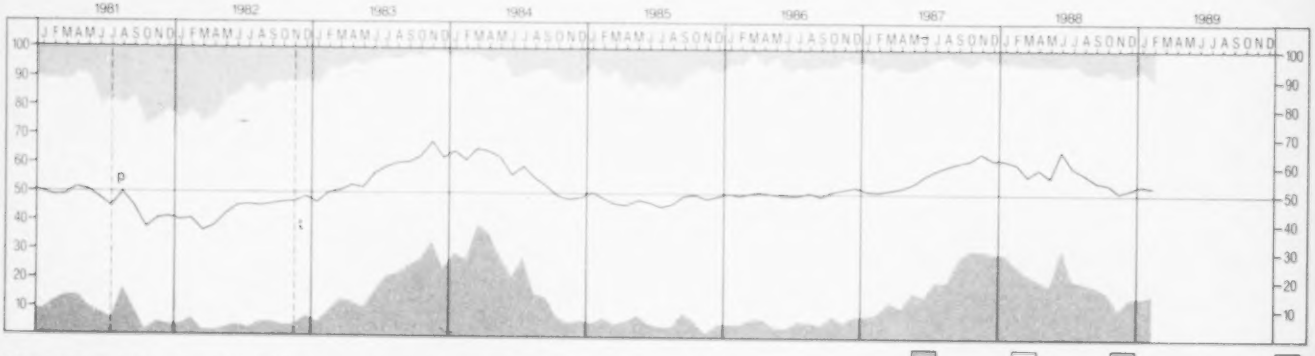
NEW ORDERS



New Orders increased in February for the 45th consecutive month. The New Orders index increased slightly to 55.9% from 54.5% in January, which was the lowest since October 1986 (also 54.5%). The modest improvement was not helped by New Export Orders, which had a declining growth rate in February.

New Orders	%Better	%Same	%Worse	Net	Index
February	32	53	15	+17	55.9
January	27	61	12	+15	54.5
December	24	59	17	+ 7	60.0
November	30	52	18	+12	58.4

VENDOR DELIVERIES



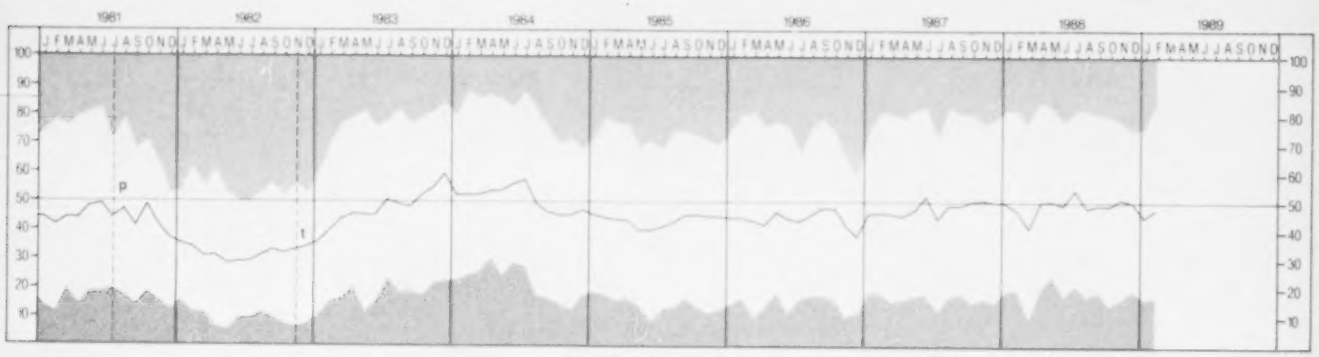
Vendor Deliveries slowed in February for the 29th consecutive month. However, the rate of slowing lessened and the 10% who reported faster deliveries is the most since August 1985 (13%). A number of commodities which have been consistently reported in short supply have become more readily available in recent months.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
February	16	74	10	+ 6	53.3
January	15	79	6	+ 9	54.0
December	15	77	8	+ 7	52.6
November	11	81	8	+ 3	51.6

IN SHORT SUPPLY:

Aluminum (17th consecutive month), **Copper** (6th consecutive month), **Nickel** (2nd consecutive month; used heavily in making stainless steel, plating metals and batteries), **Steel** (20th time in 22 months), **Stainless Steel** (13th time in 14 months), **Castings** (3rd time in 6 months), **Bleached Paperboard** (8th consecutive month), **Plastic Resins** (9th time in 10 months), **Acrylic Acid** (7th time in 8 months; used in manufacturing plastics), **Caustic Soda/Soda Ash** (21st consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (10th time in 11 months; used heavily in making ethylene oxide, plastic resins and glycols), **Ethylene Glycol** (7th time in 9 months), **Phenol** (11th consecutive month; used heavily in making phenolic resins), **Titanium Dioxide** (19th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Miscellaneous Chemicals**, **Rayon** (4th consecutive month), **Polyester**, **Bearings** (7th consecutive month), **Tomato Paste**.

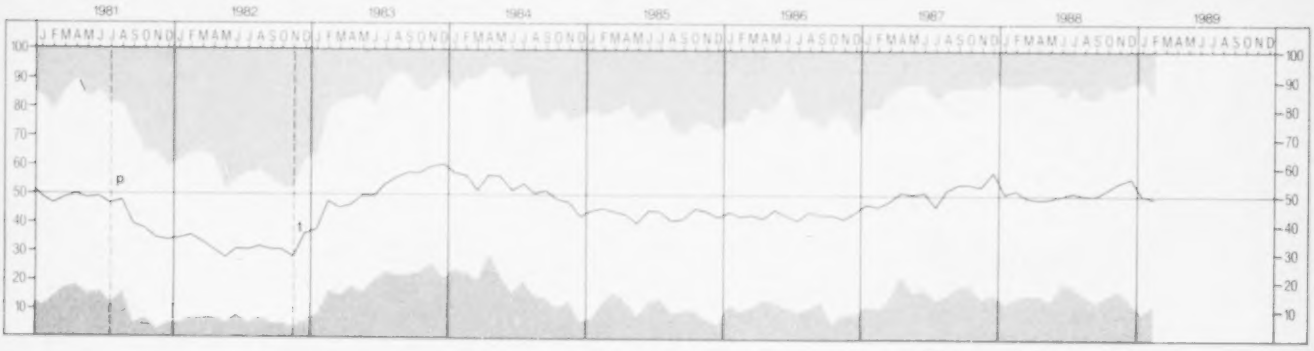
INVENTORIES



Inventories declined in February for the second consecutive month. The Inventories index at 48.1% was up from 45.5% in January, but still indicates no sign of heavy inventory buying by purchasers.

Inventories	%Higher	%Same	%Lower	Net	Index
February	18	67	15	+3	48.1
January	17	59	24	-7	45.5
December	20	55	25	-5	50.8
November	17	61	22	-5	51.8

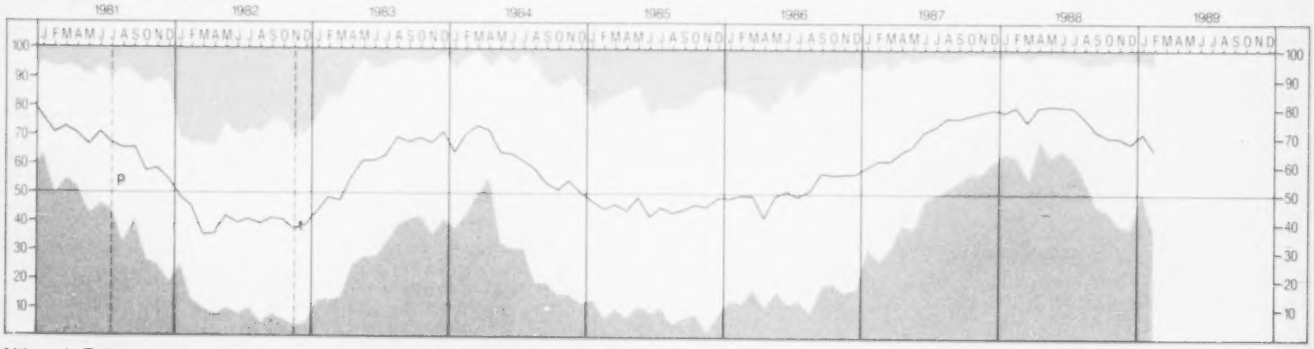
EMPLOYMENT



Employment declined in February after eight consecutive months of increasing. The Employment index at 49.7% is the lowest since May 1988 (49.4%) and is another indicator of the slowing in economic growth.

Employment	%Higher	%Same	%Lower	Net	Index
February	13	72	15	-2	49.7
January	10	80	10	0	50.5
December	14	75	11	+3	56.8
November	18	69	13	+5	55.2

COMMODITY PRICES



Although February marked the 31st consecutive month of price increases, it also was the seventh time in the past eight months that the rate of growth in price increases has declined. The Price index fell sharply to 66.0% from 71.6% in January and is the lowest in 22 months (65.6% in April 1987). Another indicator of this moderating trend in inflation is the increase in the number of commodities reported lower priced in February (7 items), the most since July 1986 (9 items).

Prices	%Higher	%Same	%Lower	Net	Index
February	38	57	5	+33	66.0
January	51	46	3	+48	71.6
December	39	58	3	+36	68.6
November	40	58	2	+38	70.2

UP IN PRICE:

Nickel (9th time in 12 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (29th time in 30 months), **Stainless Steel** (12th time in 15 months), **Steel Products** (12th time in 15 months), **Zinc** (13th time in 14 months; used heavily in metal alloys and as a protective coating for metals), **Bearings** (7th time in 8 months), **Castings** (7th consecutive month), **Tin Cans**, **Printing Paper** (23rd time in 26 months), **Plastic Products** (21st time in 22 months), **Plastic Resins** (18th time in 19 months), **Rubber** (2nd consecutive month), **Caustic Soda/Soda Ash** (27th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Phenol** (5th time in 8 months; used heavily in making phenolic resins), **Miscellaneous Chemicals**, **Polyester** (3rd consecutive month), **Fuel Oil** (3rd consecutive month), **Menthol** (2nd time in 3 months; used heavily in making confectionaries, liqueurs, cigarettes, perfume and cough drops), **Boneless Beef**.

DOWN IN PRICE:

Copper (reported up in price in November for 19th time in 21 months), **Lead** (reported up in price in January for 2nd consecutive month; used heavily in making paints, petroleum, pipe and batteries), **Methanol** (2nd consecutive month; used heavily as a solvent and in synthesizing other chemicals), **Styrene** (reported up in price in July for second consecutive month; used chiefly in making synthetic rubber, plastic resin and plastic), **Polystyrene** (reported up in price in May; used chiefly in making synthetic rubber, plastic resin and plastic), **Polypropylene** (reported up in price in August for 3rd time in 4 months; used heavily in making packaging materials and paper coatings), **Orange Juice**.

BUYING POLICY

Lead times for Production Materials lengthened in February. The number of members reporting lead times of 60 days or less for Production Materials decreased to 76%, down sharply from 84% in January. Members reporting lead times in the meaningful 6 months and longer category for Capital Expenditures declined to 53%, down from 57% in January. Lead times for non-custom Capital Expenditures also decreased, with 18% of members reporting lead times of 30 days and less, down from 20% last month, but still the most since November 1987 (19%). Lead times for Maintenance Repair and Operating (MRO) Supplies were generally shorter. Members reporting lead times of 30 days and less declined to 84%, only slightly less than 85% in January. However, those who reported buying hand-to-mouth did increase to 42% in February, up from 38% last month, and the most since October 1987 (42%).

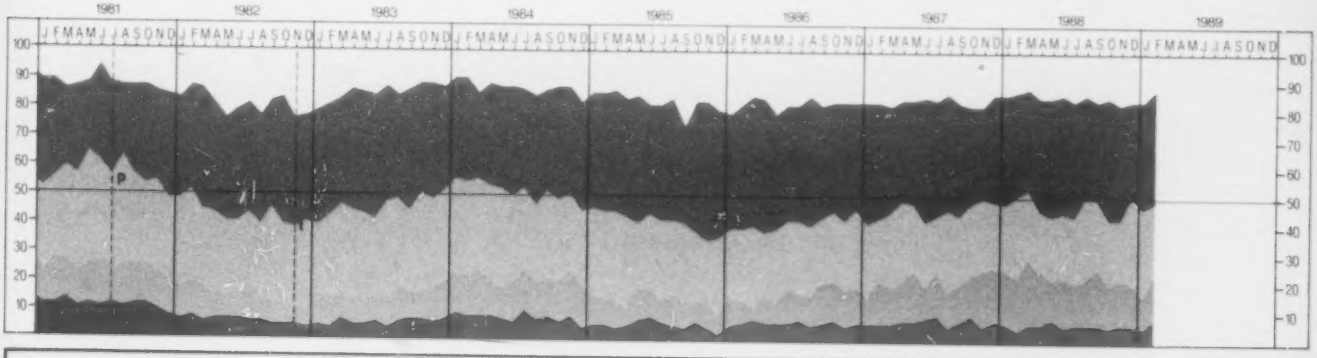
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
February	12	39	25	16	8
January	16	37	31	11	5
December	16	33	30	15	6
November	17	40	21	16	6

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
February	11	6	9	21	53
January	16	4	8	15	57
December	9	5	14	16	56
November	11	6	11	19	53

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
February	42	42	13	2	1
January	38	47	11	3	1
December	34	48	13	4	1
November	40	46	8	4	2

PRODUCTION MATERIALS



Commodity Report
February, 1989

ENERGY
Prepared by the NAPM Energy Committee. Chair: Howard T. Perley, C.P.M., International Paper, Memphis, TN.

PETROLEUM PRODUCTS: Will OPEC and non-OPEC producers succeed in restricting crude oil production to support prices? Until this becomes clear, the crude oil markets will be volatile within a trading range of $16 to $18 per barrel. Gasoline and distillate prices are stable, however, and residual fuel oil prices continue to weaken.

NATURAL GAS: February free fall in wellhead gas prices has reawakened many producers to the reality of price elasticity when demand fluctuates. With prices dropping almost 35% in one month, sellers are considering long-term contracts. Buyers seeking longer term supplies should find more willing sellers over the next few months before prices strengthen in anticipation of the 1989–90 heating season.

ELECTRIC POWER: Environmental concerns about acid rain and global warming will likely lead to new legislation affecting electric utilities. Be alert to the effect on your local utility, because significant increases in electric rates may result in some states. Controversial issues include limitations on the use of high-sulfur coal, the cost of flue-gas scrubbing in power plants, and whether non-polluting utilities should share in any remedial costs of other utilities.

COAL: Coal pricing remains negotiable. Alternate routing and stockpile levels should be considered during future months in anticipation of predicted low river levels again this summer.

STEEL
Prepared by the NAPM Steel Committee. R.C. Smith, Jr., Group Materials Manager, Kelsey-Hayes Company, Romulus, Michigan.

There are many views concerning the extension of the Voluntary Restraint Agreements (VRA's). Opinions vary even within our NAPM Steel Buyers Group. Following is the opinion of one of our members for your consideration.

After a very profitable year for the Domestic Steel Industry, some segments of the steel-using community are suggesting that VRA's should not be renewed. When the steel market changed from a buyers' to a sellers' market, and off-shore steel became more costly than domestic steel, some in our steel-using community tried to re-establish a relationship with the domestic mills. They found this not an easy task, and sometimes, impossible.

Years ago many of us might have agreed that the Domestic Steel Industry was an aging leviathan that had forgotten how to compete in the world market place. Today, however, the leviathan has become one of the lowest cost producers in the world, has shed one third of its outdated and excessive capacity, has modernized its profitable segments to a world class level, and has started to put pride back into its people and its products.

The result of these changes is a return to profitability, which in turn creates more jobs and makes our country more stable in the world market. It would not be fair to say that the Domestic Steel Industry did this on their own. They had a little help: a change in the yen-dollar relationship, new labor contracts that reduced costs, and the VRA's. But some now say the VRA's should cease, just when our Domestic Steel Industry is on the verge of being able to compete in the areas of price, quality, delivery, and technical innovation.

In order for this renaissance in the Domestic Steel Industry to continue, we must protect our steel industry from products sold at lower prices through foreign government subsidies. If foreign countries can truly compete on a non-subsidized basis, then our Domestic Steel Industry must go back to the drawing board. But if not, the VRA's must be renewed in order to protect our steel industry from unfair pricing practices.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602/752-NAPM (752-6276). Telecopier: 602/752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

The next issue of *REPORT ON BUSINESS* will be available April 3, 1989.

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National Association of Purchasing Management®

Report On Business®

April 3, 1989
Volume 7, Number 4

New Orders and Production Down Sharply

Index Lowest in 32 Months: 50.4%

Growth Rate Slows Further

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

March Report

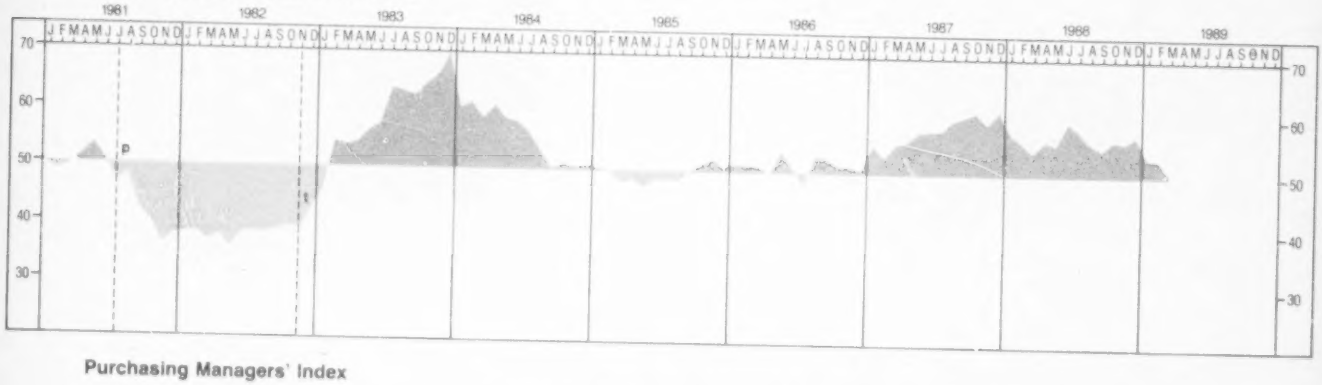
The economy continued to grow in March, but at a significantly slower pace than in the past two months, say the nation's purchasing executives in their latest ***Report On Business.*** The rate of **Production** growth slipped for the third consecutive month to its lowest since July 1986. The **New Order** growth rate decreased sharply and is at its lowest in almost four years. **Employment** continued to decline for the second consecutive month after eight previous months of increase.

New Export Orders continued to grow in March, but at a lower rate of growth for the fourth consecutive month. Of the 69.3% of members who export, 22% reported better export orders in March, while 9% reported worse, up considerably from 6% in February.

Vendor Deliveries were slower, but at the lowest rate of slowing in over two years. Furthermore, shortened lead times for **Production Materials** and a smaller list of commodities in short supply, confirmed the slowing growth in the economy. **Inventories** declined in March for the third consecutive month, although at a slightly lesser rate than in February. The rate of growth in price increases rose somewhat in March, but except for February, it is the lowest since May 1987.

The ***Report*** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "Despite reports to the contrary, purchasing executives continue to report a significantly slower growth in the economy. Virtually all indicators confirm the considerably subdued growth in the first quarter and signal even more modest growth into the second quarter."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

January	57.3	September	54.7
February	55.7	October	56.2
March	54.0	November	55.9
April	56.0	December	57.3
May	55.5	January '89	53.2
June	59.2	February '89	53.0
July	57.9	March '89	50.4
August	55.7		

The **Purchasing Managers' Index** declined to 50.4% in March, markedly lower than 53.0% in February. Although this is the 32nd consecutive month the index has exceeded 50%, it is the lowest reading since July 1986 (48.0%). A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. The first quarter average is 52.2%, the lowest quarterly average since the fourth quarter of 1986 (51.0%). "Past experience indicates that, if this average were to continue for the remainder of 1989, it would be consistent with real GNP growth of about 2.5%," said Bretz.

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

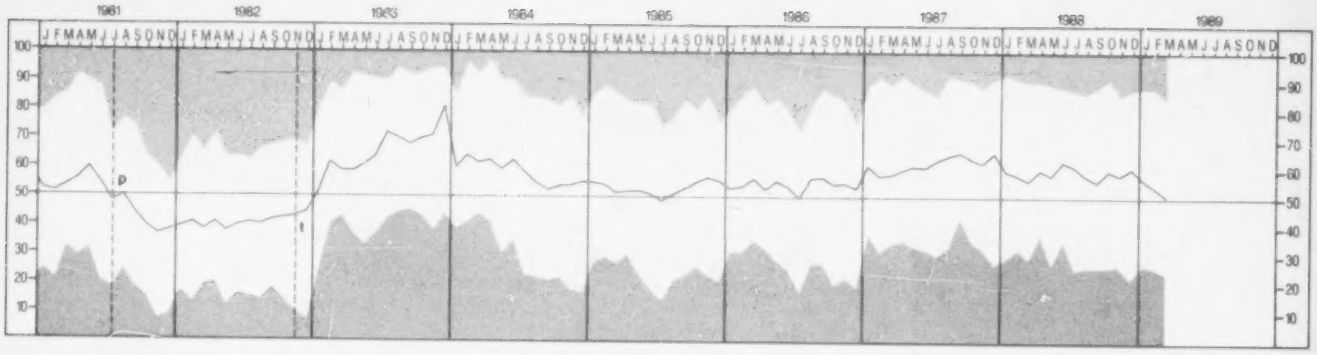
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

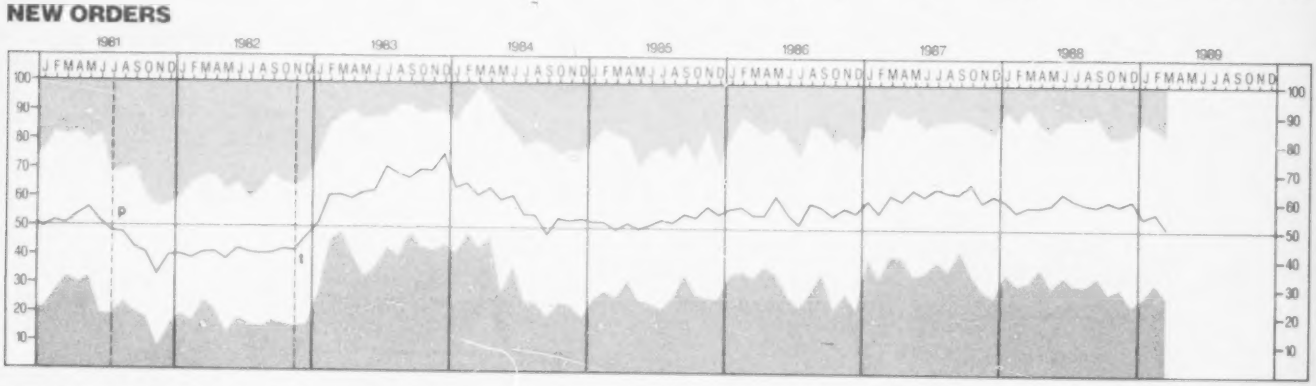
PRODUCTION



March registered the 32nd consecutive month of growth in Production. Although Production continued to grow in March, the Production index fell significantly to 50.7% from 53.7% last month which is the third consecutive decline. Moreover, the Production index at 50.7% is the lowest since July 1986 (49.3%).

Production	%Better	%Same	%Worse	Net	Index
March	24	60	16	+ 8	50.7
February	26	62	12	+14	53.7
January	27	61	12	+15	56.2
December	22	65	13	+ 9	60.0

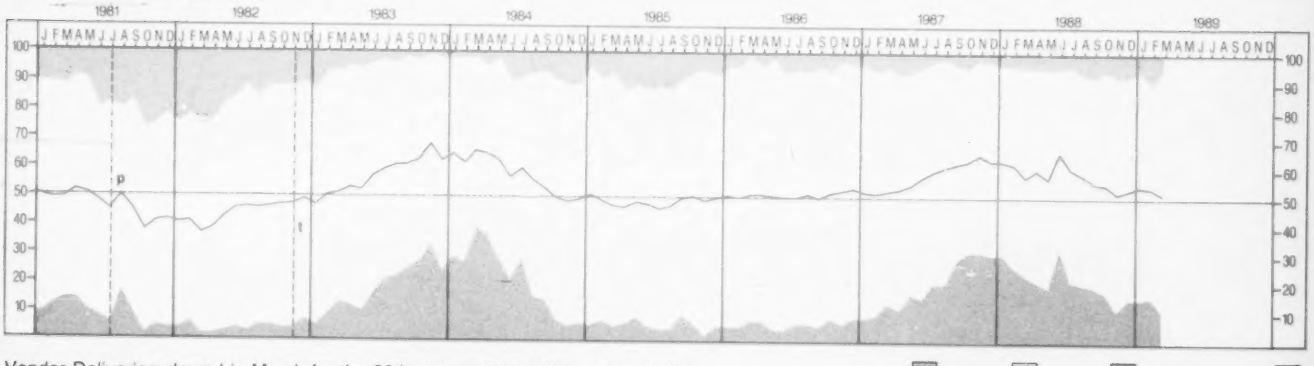
NEW ORDERS



New Orders increased in March for the 46th consecutive month. However, the rate of growth declined sharply as the New Orders index plunged to 50.9% from 55.9% in February, and is at its lowest since June 1985 (50.7%). The weak New Orders growth rate suggests an even slower economy as it enters the second quarter.

New Orders	%Better	%Same	%Worse	Net	Index
March	27	55	18	+ 9	50.9
February	32	53	15	+17	55.9
January	27	61	12	+15	54.5
December	24	59	17	+ 7	60.0

VENDOR DELIVERIES



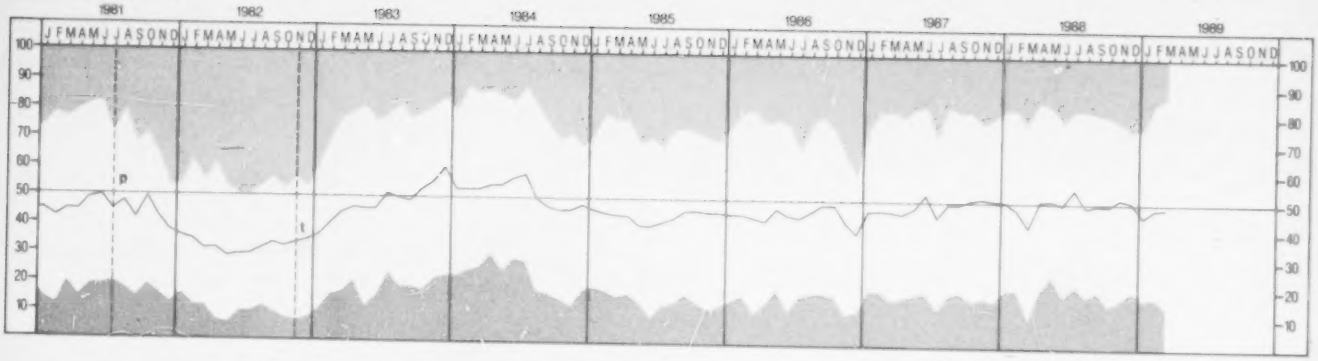
Vendor Deliveries slowed in March for the 30th consecutive month, although the rate of slowing lessened for the second consecutive month. More significantly, the Vendor Deliveries index has fallen to 51.2%, the lowest since February 1987 (also 51.2%). The number of commodities listed in short supply is also considerably fewer than in past months, with aluminum, copper and ethylene noticeably absent from the list. These are all indicators of a slowing economy.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
March	11	84	5	+ 6	51.2
February	16	74	10	+ 6	53.3
January	15	79	6	+ 9	54.0
December	15	77	8	+ 7	52.6

IN SHORT SUPPLY:

Palladium (used heavily in making alloys for bearings, springs and in precision instruments), **Steel** (21st time in 23 months), **Stainless Steel** (14th time in 15 months), **Castings** (4th time in 7 months), **Bleached Paperboard** (9th consecutive month), **Acrylic Acid** (8th time in 9 months; used in manufacturing plastics) **Caustic Soda/Soda Ash** (22nd consecutive month; used heavily in papermaking, petroleum refining and soap-making), **Ethylene Derivatives** (7th time in 10 months), **Phenol** (12th consecutive month; used heavily in making phenolic resins), **Sodium Chlorate** (used heavily in making dyes, explosives, matches and in dyeing and printing fabrics and paper), **Titanium Dioxide** (20th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Rayon** (5th consecutive month), **Polyester** (2nd consecutive month), **Bearings** (8th consecutive month; a consequence of anti-dumping suits), **Tomato Paste** (2nd consecutive month).

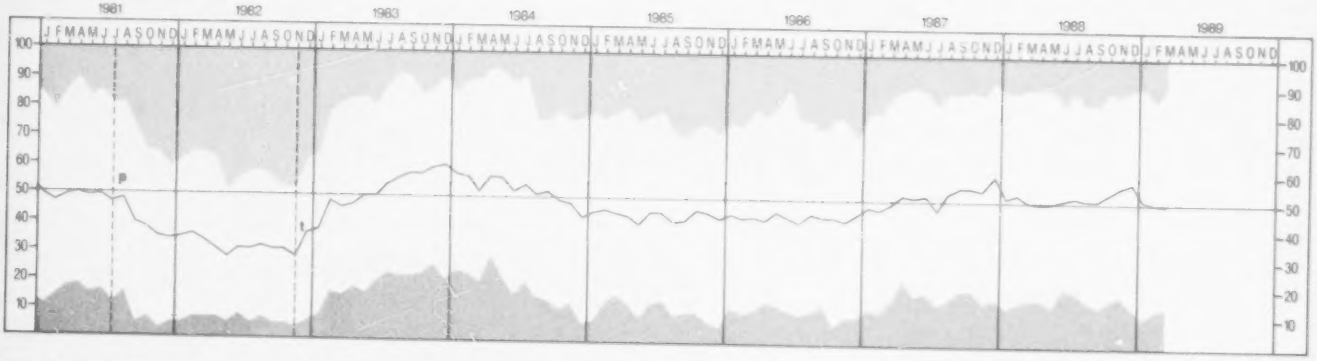
INVENTORIES



Inventories declined in March for the third consecutive month. The Inventories index at 48.6% was up slightly from 48.1% in February but confirms that manufacturers are not building inventories at a time of slowing economic growth.

Inventories	%Higher	%Same	%Lower	Net	Index
March	14	73	13	+1	48.6
February	18	67	15	+3	48.1
January	17	59	24	-7	45.5
December	20	55	25	-5	50.8

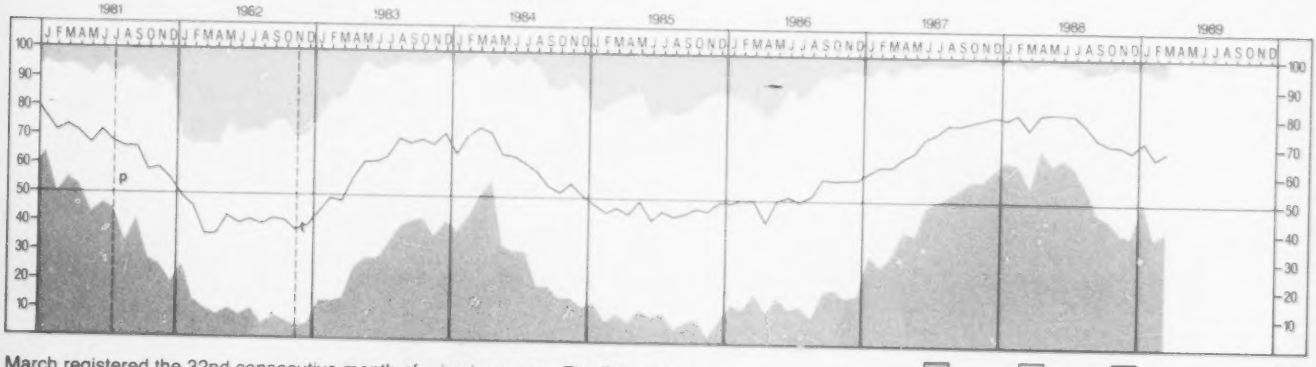
EMPLOYMENT



Employment continued to decline for the second consecutive month, after eight previous months of growth. The Employment index fell to 49.4% in March, slightly less than in February (49.7%). It is the lowest since May 1988 (also 49.4%) and is a reflection of the slowing economy.

Employment	%Higher	%Same	%Lower	Net	Index
March	14	76	10	+4	49.4
February	13	72	15	-2	49.7
January	10	80	10	0	50.5
December	14	75	11	+3	56.8

COMMODITY PRICES



March registered the 32nd consecutive month of price increases. The Price index rose slightly to 68.3% from 66.0% in February. Nevertheless, except for February, the price index at 68.3% is the lowest in 22 months and is still in an overall declining trend since mid-1988.

Prices	%Higher	%Same	%Lower	Net	Index
March	41	54	5	+36	68.3
February	38	57	5	+33	66.0
January	51	46	3	+48	71.6
December	39	58	3	+36	68.6

UP IN PRICE:

Brass (2nd time in 4 months), **Copper** (21st time in 25 months; some reports of price decreases), **Nickel** (10th time in 13 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (30th time in 31 months), **Stainless Steel** (13th time in 16 months), **Zinc** (14th time in 15 months; used heavily in metal alloys and as a protective coating for metals), **Bearings** (8th time in 9 months), **Electric Motors** (1st time since August 1988), **Refractories** (used in making industrial furnaces), **Corrugated Shipping Containers** (1st time since December 1988), **Kraft Paper Linerboard** (considerable resistance noted; used in making corrugated shipping containers and bags), **Printing Paper** (24th time in 27 months), **Wood Pulp** (used in making all grades of paper and linerboard), **Plastic Products** (22nd time in 23 months), **Plastic Resins** (19th time in 20 months), **Glass, Caustic Soda/Soda Ash** (28th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Miscellaneous Chemicals** (2nd consecutive month), **Polyester** (4th consecutive month), **Fuel Oil** (4th consecutive month).

DOWN IN PRICE:

Formaldehyde (reported up in price in April 1988; used heavily in making phenolic resins and as a disinfectant, insecticide and fumigant), **Phenol** (reported up in price in February for 5th time in 8 months; used heavily in making phenolic resins), **Methyl Ethyl Ketone (MEK)** (reported in short supply in November 1988; used heavily as a chemical solvent in surface coatings and in making resins), **Styrene** (2nd consecutive month; used chiefly in making synthetic rubber, plastic resin and plastic), **Polypropylene** (2nd consecutive month; used heavily in making packaging materials and paper coatings), **Natural Gas** (reported up in price in January for 4th time in 5 months), **Menthol** (reported up in price in February and December; used heavily in making confectionaries, liquers, cigarettes, perfume and cough drops), **Orange Juice** (2nd consecutive month).

BUYING POLICY

Lead times for Capital Expenditures were virtually unchanged from last month. Members reporting lead times in the meaningful 6 months and longer category for Capital Expenditures increased slightly to 54% from 53% in February but still less than in January (57%) and December (56%). However, lead times for Production Materials shortened as the number of members reporting lead times of 60 days or less increased to 80%, up from 76% in February. This mirrors the easing in availability noted in Vendor Deliveries. Lead times for Maintenance, Repair and Operating (MRO) Supplies also decreased, as the number of members reporting lead times of 30 days and less increased to 87%, up from 84% in February, and the most since May 1988 (also 87%).

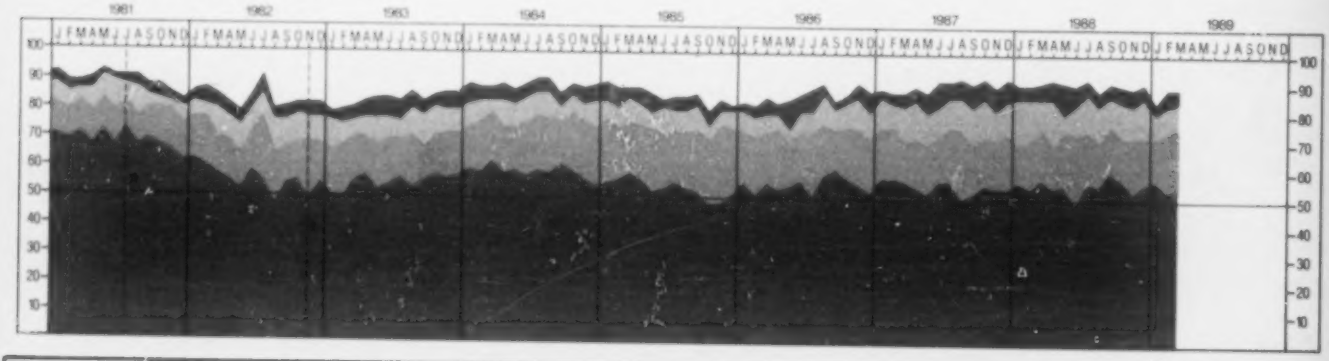
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
March	11	5	9	21	54
February	11	6	9	21	53
January	16	4	8	15	57
December	9	5	14	16	56

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
March	15	37	28	14	6
February	12	39	25	16	8
January	16	37	31	11	5
December	15	33	30	15	6

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
March	41	46	12	1	0
February	42	42	13	2	1
January	38	47	11	3	1
December	34	48	13	4	1

CAPITAL EXPENDITURES



Commodity Report
March, 1989

TEXTILES

Prepared by the NAPM Textile Committee. Chair: Gerry R. Korver, C.P.M., K-Products Inc., Orange City, Iowa.

COTTON, POLYESTER, GREIGE GOODS: The reduction of 240 million pounds of polyester staple by Eastman Chemical has created shortages, allocations with substantial price increases. The 7 cent hike in January, 1989, will be followed by a planned increase in second or third quarter. Current supply problems will likely continue for the next eighteen months to two years. Cotton prices are in the high 50's to low 60's in spite of this year's carry over. Farmers putting crops into the government loan program has affected prices via a contrived shortage. U.S. cotton is non-competitive on the world market by 9–12 cents per pound affecting our ability to export. Acrylic yarn is up 10 cents per pound; rayon is up 10% and also in short supply.

NYLON AND SPECIALTY FABRICS: Up in price is DuPont Lycra spandex by 5–9% depending on denier, the DuPont and BASF nylons by 5–10%. Both fibers should be firm through 1989. Macfield, the only major nylon texturizer, increased prices by 15 cents in early 1989. Speciality fabrics have also been affected. Lead times could be very extended and the price increases will relate primarily to fibers rather than increased manufacturing costs.

CONVERTING: Lead time is approximately 4–6 weeks with price increases of up to 10% to offset the rising cost for dye stuffs and chemicals.

NON-FERROUS METALS: Prepared by the NAPM Non-Ferrous Metals Committee. Chair: Sharon Sinke, C.P.M., Frost, Inc., Grand Rapids, MI.

ALUMINUM: U.S. operating rate is sustaining at 102% of rated capacity. Total world-wide production is near 100%. In 1989 the aluminum market will return to a characteristic slow growth in demand — 2% vs. 3½% in 1988. Significant orders are booked in the aircraft and automotive industries. Beverage cans grew 7% in 1988 and expect another 5% gain in 1989. In construction, aluminum will lose nearly 9% to substitute materials. Total exports, which rose 36% in 1988, are expected to gain another 15% this year. Semi-finished exports will rise by 25%, vs. a 31% increase in 1988. The industry has become more competitive and the dollar has continued to weaken; positive trends for export growth. In summary, supply and demand will remain tight, consumption will rise slightly, and inventories will remain low.

MAGNESIUM: There is a continuing reduction in magnesium inventories, which began in 1986, with current stocks at a 1.3 month supply. Production is not compensating for shipments. The International Magnesium Association has produced proceedings of a seminar on product and market developments, and advanced magnesium materials, plus a cassette, "Magnesium in Automotive Applications." For more information, call (703) 442-8888.

NICKEL: Demand is still exceeding supply; but it appears demand and prices may be reduced the second half of this year if interest rates continue to climb and if there is a decline in productivity. The current swing is $8.46–$9.80/lb., sometimes increasing or decreasing 20 cents per day. Expect supply and demand for 1989 similar to 1988 with prices $8.00–9.00/lb. for the first half. Current inventories are down; no new production in the near term. There is a need to control inventories to minimize the "up side" cost impact.

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The next issue of *REPORT ON BUSINESS* will be available May 1, 1989.

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National Association of Purchasing Management®

Report On Business®

May 1, 1989
Volume 7, Number 5

Index Rebounds to 53.0%

New Orders & Production Growth Rise

Employment Continues Decline

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

April Report

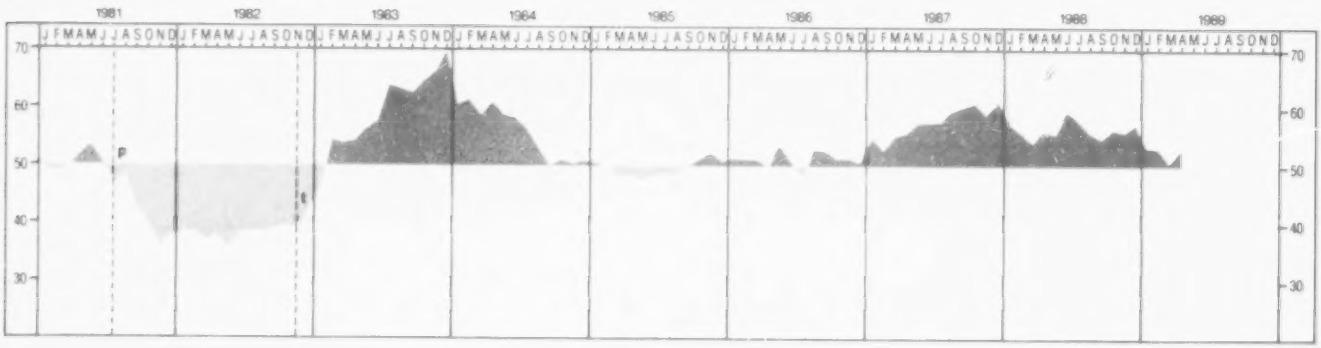
The economy continued to grow in April at a somewhat faster pace than in March, but about the same as in the first quarter, say the nation's purchasing executives in their latest ***Report On Business.*** Both **Production** and **New Orders** registered respectable increases in growth after registering declines in the rate of growth in March. Inventory buying did not fuel the pace of the growth, as **Inventories** declined for the fourth consecutive month.

New Export Orders increased at the highest rate since December, after registering three consecutive months of lower rates of growth. Of the 67% of members who said they export, 28% reported better Export Orders in April, up sharply from 22% in both February and March. The 4% who reported worse Export Orders is down considerably from 9% in March. The seasonally unadjusted index rose to 62.0%, matching December's vigorous growth rate.

Vendor Deliveries continued slower, but the rate of slowing was slightly greater than in March. The list of commodities in short supply also increased. **Employment** continued to decline in April for the third consecutive month. Although prices rose again in April, the rate of growth slowed, continuing the declining trend in inflation, which began in mid-1988.

The ***Report*** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The economy entered the second quarter on a higher note than it ended the first quarter. A surprising increase in New Export Orders appears to have fueled the brisk rebound from March's sharply lower growth. Nevertheless, most other indicators signal a moderate rate of growth in the economy in the months ahead."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

April	56.0	November	55.9
May	55.5	December	57.3
June	59.2	January '89	53.2
July	57.9	February '89	53.0
August	55.7	March '89	50.4
September	54.7	April '89	53.0
October	56.2		

The **Purchasing Managers' Index** climbed to 53.0% in April, a healthy increase from 50.4% in March. This is the 33rd consecutive month this leading indicator has registered over 50%. A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. Bretz added, "The index has averaged 52.4% for the first four months of 1989. Past experience indicates that, if this average were to continue for the remainder of 1989, it would be consistent with real GNP growth of about 2.5%, or basically the same as in the first quarter."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

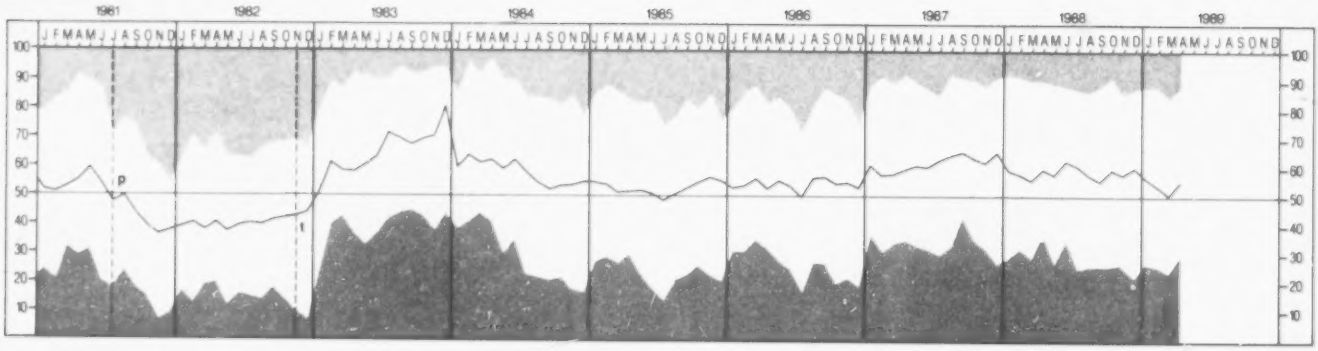
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response,
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries),
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

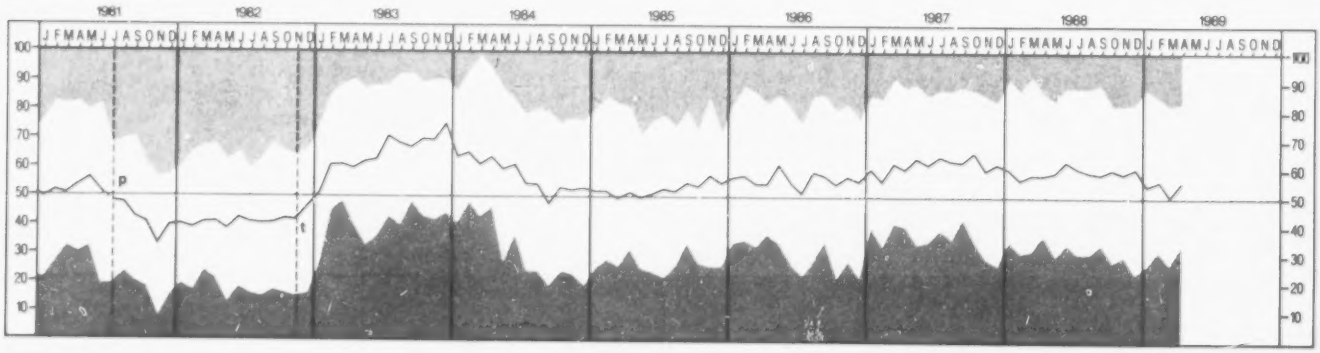
PRODUCTION



Production registered the 33rd consecutive month of expansion in April. The Production index advanced to 55.5%, considerably higher than 50.7% in March. The April increase reverses three consecutive months of declining growth.

Production	%Better	%Same	%Worse	Net	Index
April	30	58	12	+ 18	55.5
March	24	60	16	+ 8	50.7
February	26	62	12	+ 14	53.7
January	27	61	12	+ 15	56.2

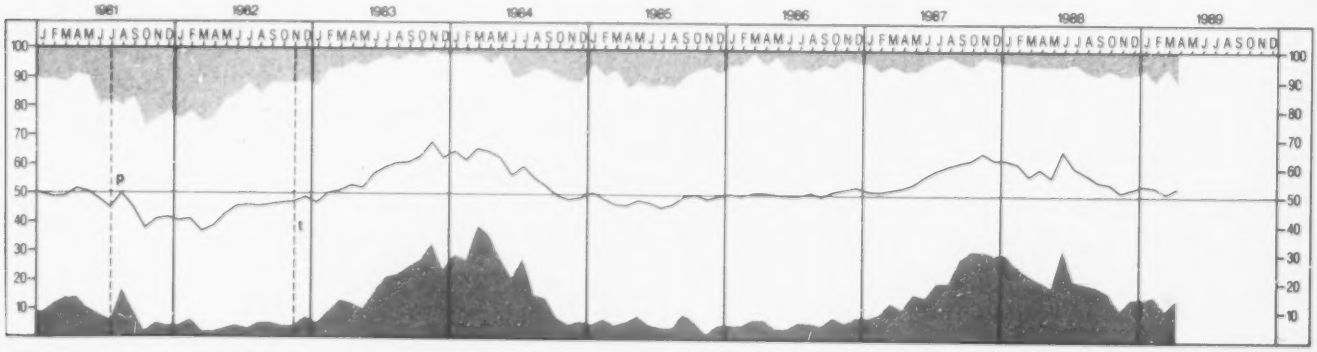
NEW ORDERS



New Orders increased in April for the 47th consecutive month. The rate of growth increased sharply as the New Order index rebounded to 55.3% from a very low 50.9% in March. The growth was spurred by a large increase in the pace of new export orders in April.

New Orders	%Better	%Same	%Worse	Net	Index
April	34	49	17	+ 17	55.3
March	27	55	18	+ 9	50.9
February	32	53	15	+ 17	55.9
January	27	61	12	+ 15	54.5

VENDOR DELIVERIES



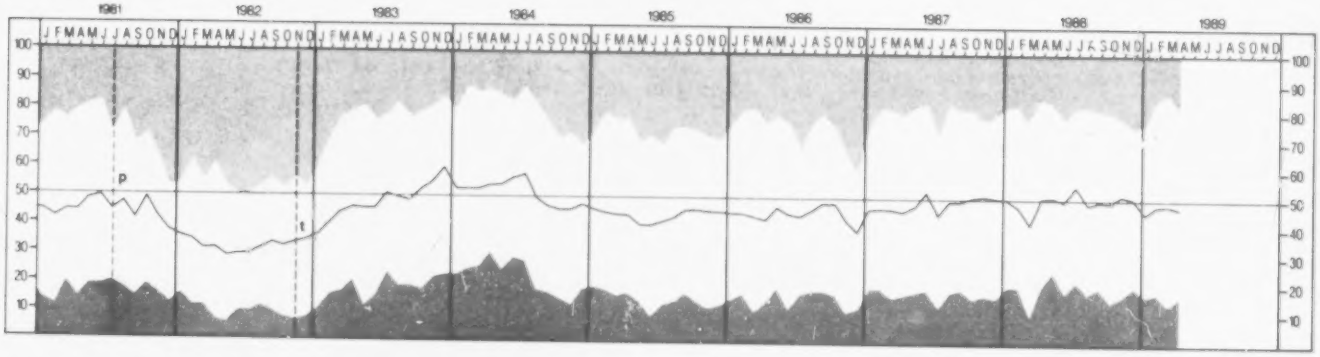
Vendor Deliveries slowed in April for the 31st consecutive month. The rate of slowing was somewhat greater than in March. The Vendor Deliveries index rose to 53.2%, up from 51.2% in March, and reflects a list of commodities in short supply which grew larger in April.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
April	15	74	11	+ 4	53.2
March	11	84	5	+ 6	51.2
February	16	74	10	+ 6	53.3
January	15	79	6	+ 9	54.0

IN SHORT SUPPLY:

Palladium (2nd consecutive month; used heavily in making alloys for bearings, springs and in precision instruments), **Copper** (7th time in 8 months), **Nickel** (3rd time in 4 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (22nd time in 24 months), **Castings** (5th time in 8 months), **Bleached Paperboard** (10th consecutive month), **Acrylic Acid** (9th time in 10 months; used in manufacturing plastics), **Caustic Soda/Soda Ash** (23rd consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Ethylene** (11th time in 13 months; used heavily in making ethylene oxide, plastic resins and glycols), **Ethylene Derivatives** (8th time in 11 months), **Titanium Dioxide** (21st consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Polypropylene** (used in making fabrics, carpets and yarns), **Zircon** (used in making glass), **Nylon, Rayon** (6th consecutive month), **Polyester** (3rd consecutive month; reported to be on allocation), **Bearings** (9th consecutive month; a consequence of anti-dumping suits), **Motors, SRAMS** (static electronic memory devices used heavily in computers; Japanese suppliers switched production to more profitable DRAMS).

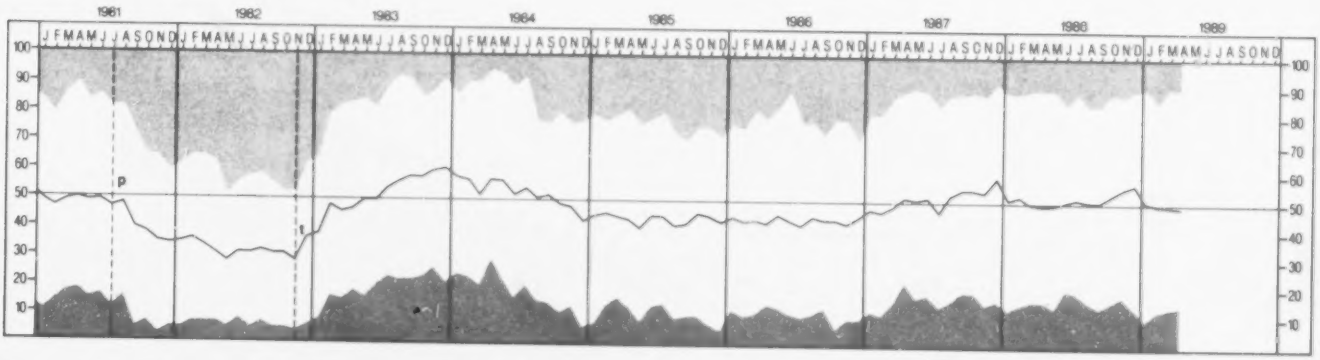
INVENTORIES



For the fourth consecutive month, manufacturers' inventories declined. The seasonally adjusted Inventories index declined to 47.4% from 48.6% in March. Despite slowing vendor deliveries and numerous commodities in short supply, purchasers refuse to build inventories. This should cushion any shock from a slowing economy.

Inventories	%Higher	%Same	%Lower	Net	Index
April	17	64	19	-2	47.4
March	14	73	13	+1	48.6
February	18	67	15	+3	48.1
January	17	59	24	-7	45.5

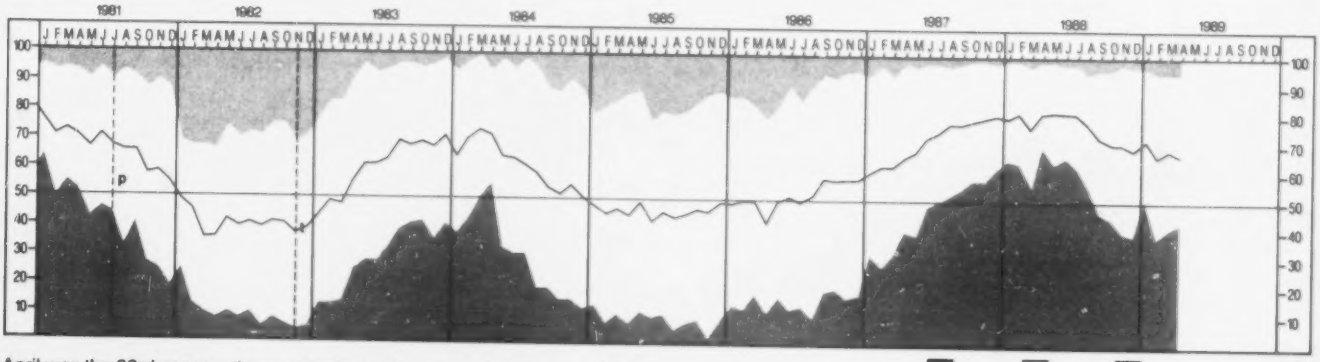
EMPLOYMENT



Employment declined for the third consecutive month, after increasing the previous eight months. The Employment index has weakened to 49.2%, slightly less than in March (49.4%). It is the lowest in over a year (49.1% in April 1988) and reflects the caution with which manufacturers view the slowing economy.

Employment	%Higher	%Same	%Lower	Net	Index
April	15	75	10	+5	49.2
March	14	76	10	+4	49.4
February	13	72	15	-2	49.7
January	10	80	10	0	50.5

COMMODITY PRICES



April was the 33rd consecutive month of price increases. However, the Price index fell to 66.5% in April from 68.3% in March. Except for February (66.0%), the Price index at 66.5% is the lowest in two years (65.6% in April 1987) and continues in an overall declining trend since June 1988 (81.3%).

Prices	%Higher	%Same	%Lower	Net	Index
April	43	52	5	+38	66.5
March	41	54	5	+36	68.3
February	38	57	5	+33	66.0
January	51	46	3	+48	71.8

UP IN PRICE:

Nickel (11th time in 14 months; used heavily in making stainless steel, plating metals and batteries), **Steel** (31st time in 32 months), **Stainless Steel** (14th time in 17 months), **Zinc** (15th time in 16 months; used heavily in metal alloys and as a protective coating for metals), **Bearings** (9th time in 10 months), **Corrugated Shipping Containers** (2nd consecutive month), **Kraft Paper/Linerboard** (2nd consecutive month; used in making corrugated shipping containers and bags), **Printing Paper** (25th time in 28 months), **Plastic Resins** (20th time in 21 months), **Rubber** (2nd time in 4 months), **Alcohols** (used as a solvent in laboratories and in industry), **Aminos** (used as a fungicide, emulsifier and soil stabilizer), **Caustic Soda/Soda Ash** (29th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Titanium Dioxide** (1st time since October 1988; a lead-free pigment used heavily as a whitener in coatings, paints, paper and other industrial applications), **Miscellaneous Chemicals** (3rd consecutive month), **Cotton, Polyester** (5th consecutive month), **Fuel Oil** (5th consecutive month), **Diesel Fuel, Gasoline**.

DOWN IN PRICE:

Aluminum (reported up in price in January for 22nd time in 24 months), **Lead** (2nd time in 3 months; used heavily in making paints, petroleum, pipe and batteries), **Chlorine** (used heavily in bleaching paper and fabrics, purifying water, and in making synthetic rubber, plastics and other chemicals), **Methanol** (3rd time in 4 months; used heavily as a solvent and in synthesizing other chemicals), **Polyethylene Resin** (used heavily in making packaging materials and paper coatings), **Polypropylene** (3rd consecutive month; used heavily in making packaging materials and paper coatings).

BUYING POLICY

Lead times for Production Materials were only slightly changed from last month. Members reporting lead times of 60 days or less for Production Materials increased to 82%, up from 80% in March and 76% in February. This shorter lead time is a reflection of the considerable general improvement in vendor deliveries which has occurred since mid-1988. Lead times for Capital Expenditures lengthened slightly for the second consecutive month. Members reporting lead times in the significant 6 months and longer category for Capital Expenditures increased to 56% in April, up from 54% in March and 53% in February. Lead times for the Maintenance, Repair and Operating (MRO) Supplies lengthened as the number of members reporting lead times of 30 days or less declined to 81%, down from 87% in March, which was the most since May 1988 (also 87%).

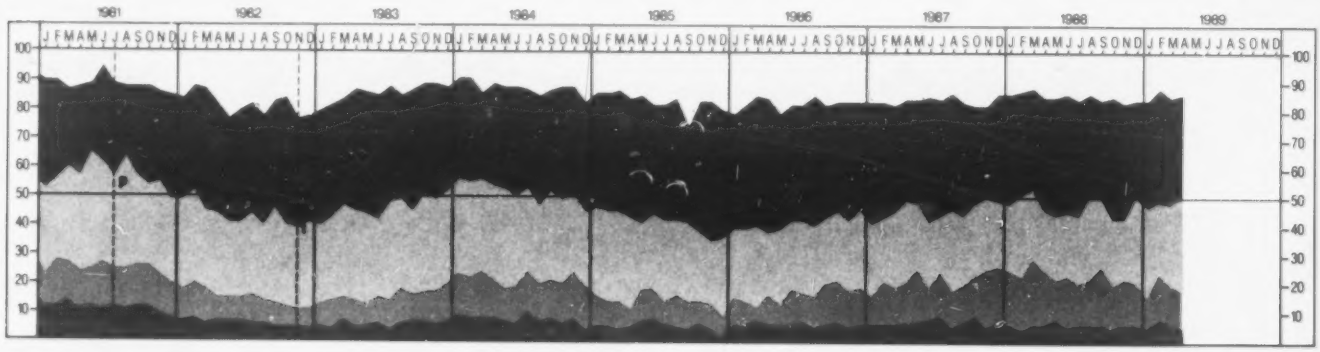
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
April	14	35	33	13	5
March	15	37	28	14	6
February	12	39	25	16	8
January	16	37	31	11	5

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
April	13	3	9	19	56
March	11	5	9	21	54
February	11	6	9	21	53
January	16	4	8	15	57

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
April	39	42	14	4	1
March	41	46	12	1	0
February	42	42	13	2	1
January	38	47	11	3	1

PRODUCTION MATERIALS



Commodity Report
April, 1989

PACKAGING
Prepared by the NAPM Packaging Committee. Chair: Carl Dirkse, C.P.M., S.C. Johnson & Son, Inc., Racine, WI.

GENERAL: Packaging markets remain strong. Paper and paperboard production reached an all-time high in 1988. Continuing at this rapid pace so far in 1989. Price increases should moderate in 1989.

METAL CANS: Supply and demand are in balance; pricing is stable and supply is adequate.

FIBRE CANS: This mature market continues to be stable. No price increases are indicated and supply is adequate to surplus.

GLASS: Price increases announced and appear to be holding. Supplies adequate. A soda ash shortage looms for this summer.

MOLDED PLASTICS: Resin prices moderating. Members report PE holding, PP decreasing, and PVC increasing. Molded product prices will probably follow. Supply improving somewhat. News in this industry concerns disposal problems with plastic.

FILMS: Moderating of resin prices should prevent any significant price increases. Supply generally adequate, with some tightness.

LAMINATED STOCK: Impacted by paper, plastic, and aluminum, this market is mixed depending on the structure and the customer. Supply is somewhat tight with some price increases.

METAL DRUMS: Supply continues adequate, with prices increasing, due to higher steel prices.

FIBRE DRUMS: Market is stable to strong. Due to good sales and raw material increases, some prices being raised.

FOLDING CARTONS: Continues to be the strongest market in packaging. SBS price increases are sticking. SBS supplies are tight, and some members are on allocation. Price increases on the scale of 1988, however, are unlikely.

CORRUGATED: Linerboard companies announced an increase of $30/ton, but many members don't believe it will hold. Supply improving. There should not be increases in 1989 similar to those in 1988. Possibility of a decrease exists.

BAGS: Prices are stable to increasing; availability is adequate to tight. The real news is the environmental issue of the biodegradability of plastic bags.

PAPER PRODUCTS: Prepared by the NAPM Paper Committee. Chair: Glenn Farber, C.P.M., Vanier Graphics Corp., Santee, CA.

GENERAL: 1989 starting strong in most grades. Fear of slowdown in second half prompting increases for many grades — last chance for some time. Paper capacity growth projected at 3.3% for 1989–91. Some prediction of excess pulp for '91–'92.

NEWSPRINT: Readily available and will continue so. Much capacity coming on later in the year adding to oversupply. Lead time normal. January 1 increase never materialized. Discounting increasing.

UNCOATED GROUNDWOOD: Normal availability should remain. Lead time, inventory, and pricing steady, but may soften due to newsprint excess.

COATED GROUNDWOOD: Demand still strong but may be softening; some reports of going off allocation.

UNCOATED FREESHEET: Availability normal or better and lead times decreasing. Some allocations on larger buyers. Considerable capacity anticipated. First signs of softening due to slower growth. Should be turning to buyer's market soon. Announced increase for April 1 having trouble except for reprographic sector.

COATED FREESHEET: Availability normal and should stay stable or decrease. Inventories mixed between increases and decreases. Prices increasing.

BLEACHED BRISTOLS: Supply very tight. Limited capacity increases. Lead times steady. Inventories steady to decreasing. Prices increased in January, more expected later in the year.

PAPERBOARD/LINERBOARD: Supplies very tight, especially paperboard. Will continue on allocation for some time. Lead times steady. Price steady for now, but likely to increase later. Linerboard increase delayed temporarily. Still very shaky as supply is catching up with demand.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602/752-NAPM (752-6276). Telecopier: 602/752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

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National Association of Purchasing Management®

Report On Business®
June 5, 1989
Volume 7, Number 6

Economy Declines: PMI Falls to 49.7%

Inflation Index Lowest Since December 1985

Employment Declines

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

May Report

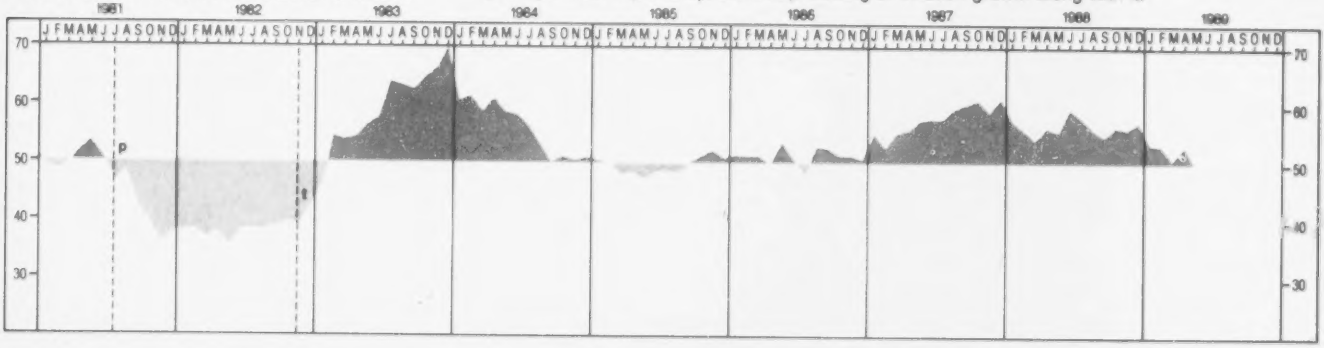
The economy declined slightly in May for the first time since July 1986, say the nation's purchasing executives in their latest ***Report On Business.*** **Production** continued to grow, although at a significantly slower pace than in April. **New Orders** continued to expand in May, but also at a reduced rate. Once again, Inventory buying did not supply the growth in Production. **Inventories** decreased sharply in May for the fifth consecutive monthly decline.

New Export Orders increased in May at a somewhat slower rate of growth. Of the 69% of members who said they export, 25% reported better Export Orders, down slightly from 28% in April. The 5% who reported worse Export Orders is up a bit from 4% in April. It appears obvious from the seasonally unadjusted index of 60.0% which was only moderately lower than 62.0% in April, that exports continue to fuel the economic growth.

Vendor Deliveries were faster in May for the first time since September 1986 (49.6%). The Vendor Delivery index fell sharply to 49.3%, the lowest since December 1985 (also 49.3%). The number of commodities reported in short supply was the fewest since November 1987. **Employment** declined for the fourth consecutive month. The trend in inflation continued sharply downward, as purchasing executives have been forecasting since December and reporting since mid-1988.

The ***Report*** was issued today to Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The total economy resumed it's ratcheting path toward slower growth during May. The manufacturing economy reported the first decline in growth in almost three years. Expanding exports and increased capital expenditures are providing the real growth. Virtually all indicators confirmed the slowing of the economy, and, perhaps most importantly, the sharp slowing of inflation growth along with it."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

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July	57.9	February '89	53.0
August	55.7	March '89	50.4
September	54.7	April '89	53.0
October	56.2	May '89	49.7

The **Purchasing Managers' Index** (PMI) declined to 49.7% in May, down sharply from 53.0% in April. This breaks the string of 33 consecutive months this leading indicator has registered over 50% and clearly quickens the pace of the economic slowdown. A reading above 50 indicates that the economy is generally expanding; below 50, that the economy is generally declining. Bretz added, "The PMI has averaged 51.9% for the first five months of 1989. Past experience indicates that if this average were to continue for the balance of the year, it would be consistent with real GNP growth of about 2.5%, or roughly the same as in the first quarter. The PMI would have to fall below 44% before signalling negative real GNP."

Data and method of presentation

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Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
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The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

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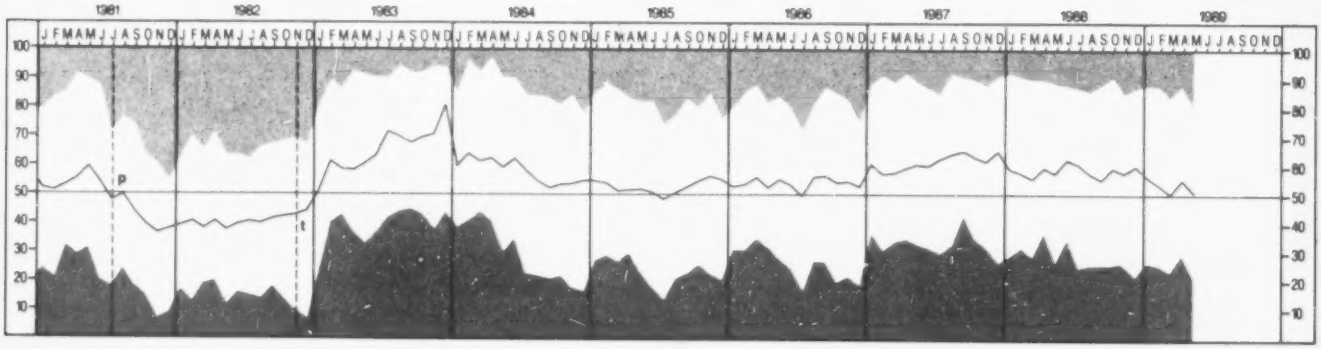
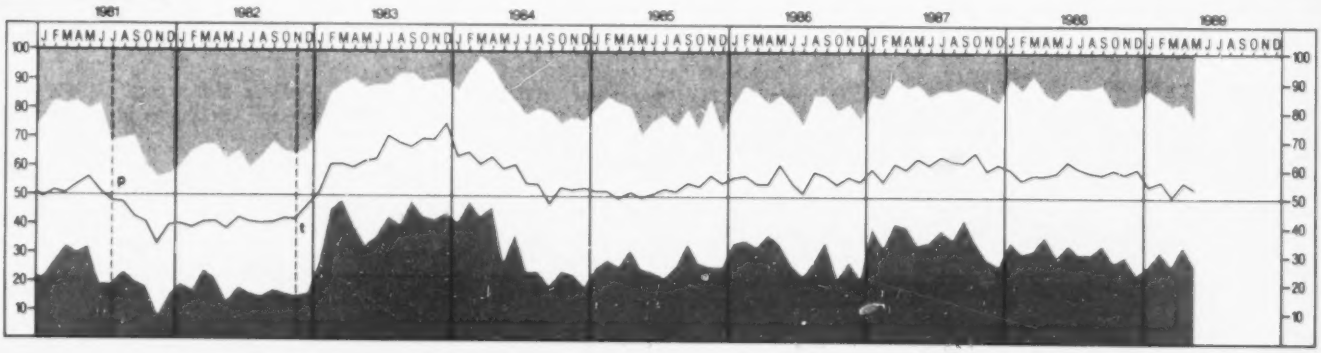
PRODUCTION



Production expanded in May for the 34th consecutive month. However, the Production index fell significantly to 51.1% from the brisk 55.5% of April, thus resuming the slowing growth trend which temporarily reversed direction last month.

Production	%Better	%Same	%Worse	Net	Index
May	22	59	19	+ 3	51.1
April	30	58	12	+18	55.5
March	24	60	16	+ 8	50.7
February	26	62	12	+14	53.7

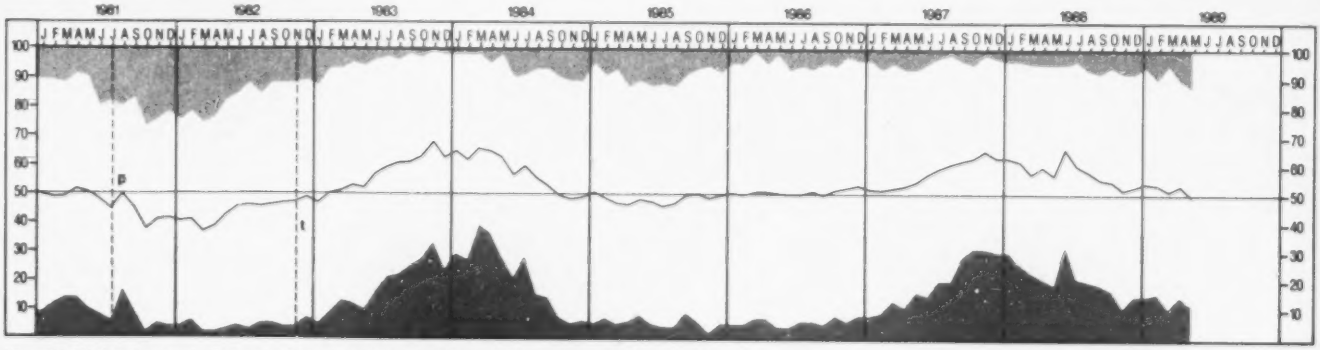
NEW ORDERS



New Orders grew in May marking the fourth anniversary of consecutive growth. Although the New Order index slowed to 53.4% from 55.3% in April, it still suggests continued modest growth. The majority of this growth undoubtedly is a result of continuing strength in new export orders.

New Orders	%Better	%Same	%Worse	Net	Index
May	27	50	23	+ 4	53.4
April	34	49	17	+17	55.3
March	27	55	18	+ 9	50.9
February	32	53	15	+17	55.9

VENDOR DELIVERIES



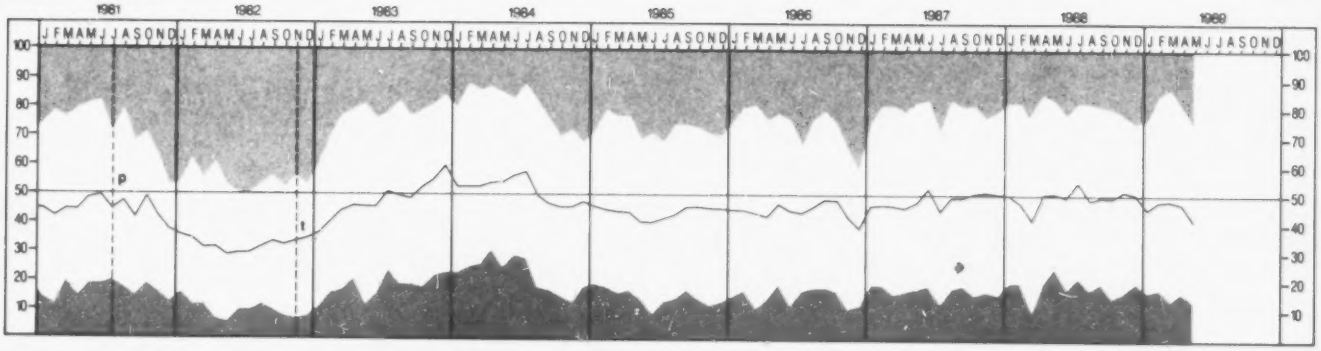
Vendor Deliveries were faster in May, breaking a string of 31 consecutive months in which Vendor Deliveries were reported slower. Faster deliveries generally indicate a slowing economy. The Vendor Deliveries index dropped sharply to 49.3%, the lowest in almost three and a half years (December 1985 — also 49.3%). Also meaningful was the fact that the number of commodities reported in short supply declined to 12, the fewest since November 1987 (11).

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
May	12	75	13	- 1	49.3
April	15	74	11	+ 4	53.2
March	11	84	5	+ 6	51.2
February	18	74	10	+ 6	53.3

IN SHORT SUPPLY:

Steel (23rd time in 25 months), **Stainless Steel** (15th time in 17 months), **Castings** (6th time in 9 months), **Bleached Paperboard** (11th consecutive month), **Wood Pulp** (used in making all grades of paper and linerboard), **Acrylic Acid** (10th time in 11 months; used in manufacturing plastics), **Caustic Soda/Soda Ash** (24th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Titanium Dioxide** (22nd consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Zircon** (2nd consecutive month; used in making glass), **Polyester** (4th consecutive month; reported to be on allocation), **Bearings** (10th consecutive month; a consequence of anti-dumping suits), **Motors** (2nd consecutive month).

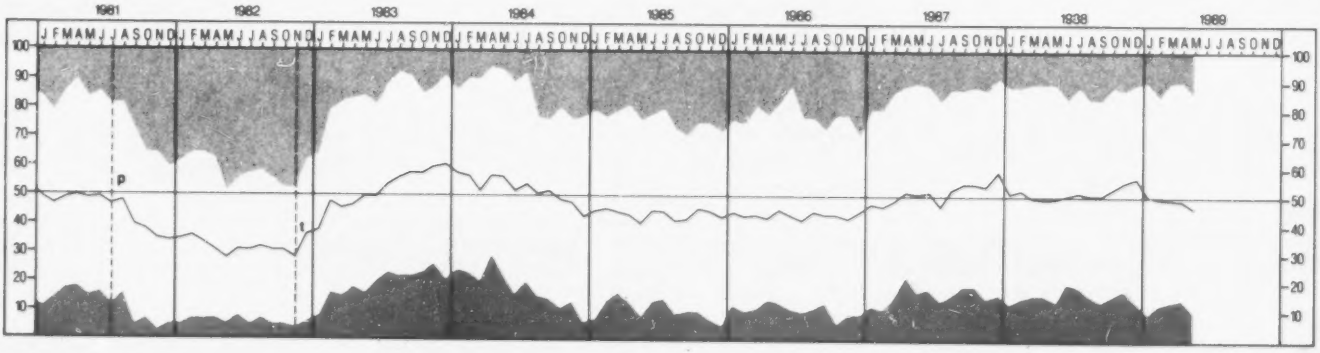
INVENTORIES



May marked the fifth consecutive month that purchasers reported a decline in inventories. This month's decline in the Inventories index to 41.9%, from 47.4% in April, was the most dramatic in some time and the lowest the Inventories index has been in almost four years (July 1985 — 41.8%). Purchasers appear to be more confident about material shortages dissipating as they face the usual summer slowdown in activity.

Inventories	%Higher	%Same	%Lower	Net	Index
May	14	61	25	−11	41.9
April	17	64	19	− 2	47.4
March	14	73	13	+ 1	48.6
February	18	67	15	+ 3	48.1

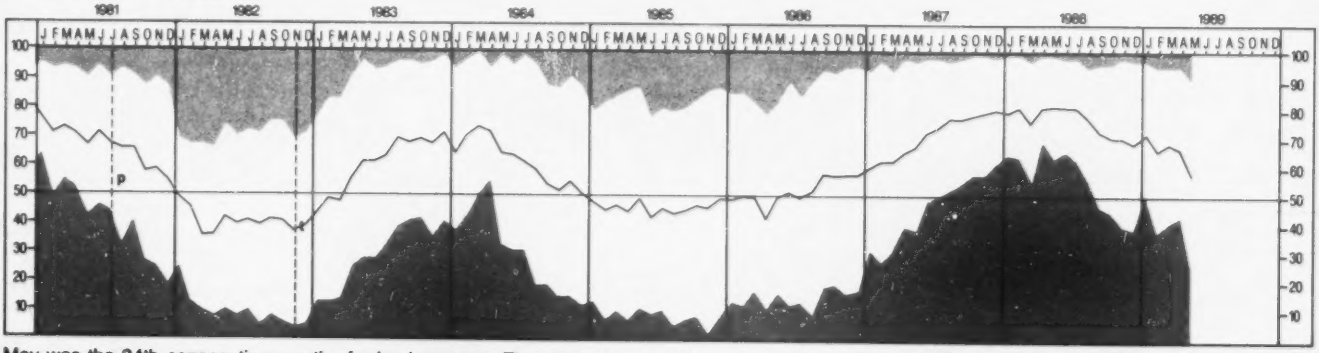
EMPLOYMENT



For the fourth consecutive month, Employment declined. The Employment index dropped to 46.6%, significantly weaker than in April (49.2%). The index at 46.6% is now the lowest in over two years (February 1987 — also 46.6%) and mirrors the growing caution with which manufacturers view the slowing in the economy.

Employment	%Higher	%Same	%Lower	Net	Index
May	11	75	14	−3	46.6
April	15	75	10	+5	49.2
March	14	76	10	+4	49.4
February	13	72	15	−2	49.7

COMMODITY PRICES



May was the 34th consecutive month of price increases. The good news is that the growth in price increases fell sharply in May. The Price index plunged to 57.6% from 66.5% in April and the lowest since December 1986 (57.0%). Of added significance is that only 11 items were reported up in price, the fewest since February 1987 (7 items). Perhaps more importantly, 10 commodities were reported down in price, almost the same number that increased, and the most since July 1986 (also 10 items).

Prices	%Higher	%Same	%Lower	Net	Index
May	25	65	10	+15	57.6
April	43	52	5	+38	66.5
March	41	54	5	+36	66.3
February	38	57	5	+33	66.0

UP IN PRICE:

Lead (3rd time in 5 months; reported lower priced in April; used heavily in making paints, petroleum pipe and batteries), **Steel** (32nd time in 33 months; some reports of price decreases), **Bearings** (10th time in 11 months), **Castings** (8th time in 10 months), **Corrugated Shipping Containers** (3rd consecutive month), **Caustic Soda/Soda Ash** (30th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Titanium Dioxide** (2nd consecutive month; a lead-free pigment used heavily as a whitener in coatings, paints, paper and other industrial applications), **Miscellaneous Chemicals** (4th consecutive month), **Corn Starch** (used heavily in processed foods, making corrugated shipping containers, paper and other industrial applications), **Polyester** (6th consecutive month), **Fuel Oil** (6th consecutive month).

DOWN IN PRICE:

Aluminum (2nd consecutive month), **Zinc** (used heavily in metal alloys and as a protective coating for metal), **Ethylene** (used heavily in making ethylene oxide, plastic resins and glycols), **Methanol** (4th time in 5 months; used heavily as a solvent and in synthesizing other chemicals), **Methyl Ethyl Keytone (MEK)** (2nd time in 3 months; used heavily as a chemical solvent in surface coatings and in making resins), **Polyethylene Resin** (2nd consecutive month; used heavily in making packaging materials and paper coatings), **Polypropylene** (4th consecutive month; used heavily in making packaging materials and paper coatings), **Polystyrene** (used chiefly in making synthetic rubber, plastic resins and plastic), **Styrene** (used chiefly in making synthetic rubber, plastic resins and plastic), **DRAMS** (dynamic electronic memory devices used heavily in computers).

BUYING POLICY

Lead times for Capital Expenditures have not significantly changed over the past three months. Members reporting lead times in the significant 6 months and longer category for Capital Expenditures slipped only slightly to 55% from 56% in April. This is near the average reported for the last three months. Lead times for Production Materials were also virtually unchanged except that the number of purchasers reporting lead times of 30 days or less increased to 51%, up from 49% last month. Lead times for Maintenance, Repair and Operating (MRO) supplies declined as the number of members reporting lead times of 30 days or less increased to 84%, up from 81%.

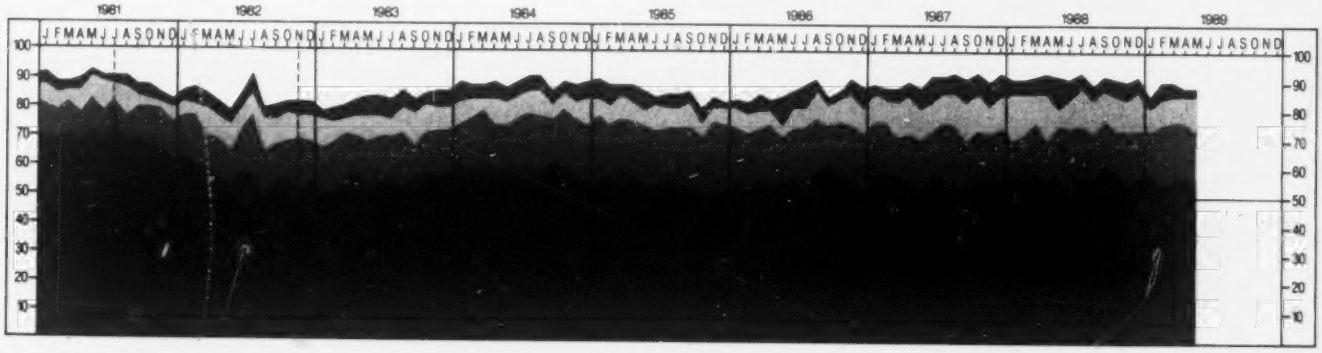
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
May	13	3	12	17	55
April	13	3	9	19	56
March	11	5	9	21	54
February	11	6	9	21	53

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
May	14	37	31	13	5
April	14	35	33	13	5
March	15	37	28	14	6
February	12	39	25	16	8

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
May	37	47	13	2	1
April	39	42	14	4	1
March	41	46	12	1	0
February	42	42	13	2	1

CAPITAL EXPENDITURES



Commodity Report
May, 1989

STEEL

Prepared by the NAPM Steel Committee: John Nevin, CSX Transportation.

The domestic steel industry started 1989 on a strong financial basis with reported profits last year estimated at $2 billion. This is remarkable in light of $12 billion in losses during the early to mid-1980's. The Voluntary Restraint Agreements (VRA) are scheduled to expire September 30, 1989, though the steel companies and labor want extensions. It appears that they will be extended with some modifications, as the Bush Administration seems committed to some form of extension. The major integrated steel companies labor contract expires July 31, 1989, with the exception of USX and the companies in Chapter 11 reorganization. Bethlehem Steel has reached a tentative agreement with the United Steelworkers that is estimated to boost wages and benefits by 20 percent over 50 months. Will this agreement lead to higher prices and does this mark the return to the old wage-price spiral that was one of big steel's problems during the past decade? The apparent generosity of this agreement may jeopardize the steel industry's attempt to extend the VRA's. The economic outlook for the balance of 1989 is mixed. Many economists are forecasting a dip beginning in the second half of this year and continuing into 1990. The Steel Buyer's April Survey supports an easing in economic activity during the next six months; the percentage of those looking for a downward movement is the highest since December 1987. But the greatest percentage of respondents expect economic activity over the next six months to be unchanged from current levels. Another question mark on the steel industry's ability to compete in the global marketplace is the recent strength of the dollar, which is at a nine-month high. Partially offsetting the anticipated pattern-setting Bethlehem Steel contract, the possible slowdown in the economy, and the strengthening dollar, are the productivity gains in the steel industry, which have more than doubled since 1982. The balance of 1989 will be a challenge for the domestic steel industry, which appears to be structurally positioned to take advantage of current business conditions or to weather any downturn in the economy.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602/752-NAPM (752-6276). Telecopier: 602/752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

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National Association of Purchasing Management®

Report On Business®

July 3, 1989
Volume 7, Number 7

Economy Declines Further: PMI Falls to 48.8%

Price Index Declines: Lowest Since April 1986

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

June Report

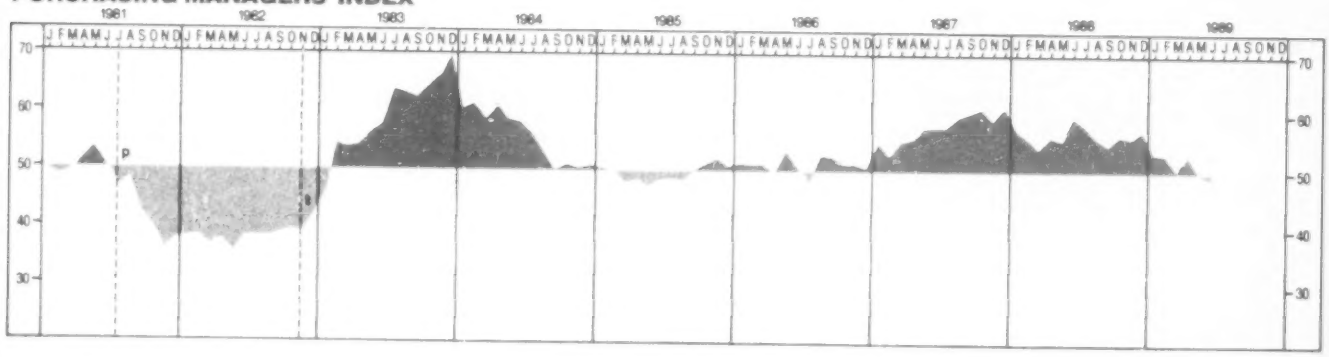
The economy declined in June for the second consecutive month, say the nation's purchasing executives in their latest ***Report On Business.*** **Production** was the only indicator to report an increase in growth. **New Orders** declined in June, for the first time since May 1985, and the New Order index is the lowest since September 1984. Although **Inventories** continued to decline the rate of decline was less than in the previous five months. Some members reported stockpiling in the event of steel-mill work interruptions this summer. In a special question, 30% of members indicated steel was critical to their company's production. Of those 30%, 84% do not expect any work interruption as a consequence of the July 31st contract expiration for several mills which have not yet agreed to terms. However, 65% said they plan to increase inventory prior to July 31st as a hedge against potential steel-work interruptions.

Although the number of members exporting rose to 71% from 69% in May, the rate of growth in **New Export** orders slowed significantly in June. Of those who export, 18% reported better Export Orders, down from 25% in May. The 9% who reported worse Export Orders is up from 5% in May. The seasonally unadjusted index of 54.5% is considerably lower than last month (60.0%).and the lowest since we began this index in January 1988.

Vendor Deliveries were faster for the second consecutive month. The number of commodities reported in short supply was the fewest since October 1987. **Employment** declined for the fifth consecutive month, although the rate of decline was less than in May. For the first time in 34 consecutive months, more purchasing executives reported price decreases than increases. This is the latest in the downward trend in inflation which started in mid-1988.

Robert J. Bretz, C.P.M., chairman of the NAPM Business Survey Committee, and director of materials management at Pitney Bowes, Inc., said, "The total economy continued down the path toward slower growth. The manufacturing economy declined for the second consecutive month as all indicators, except Production, registered declines. The best news is that inflation appears to be slowing at a faster pace than the overall economy."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index

June	59.2	January '89	53.2
July	57.9	February '89	53.0
August	55.7	March '89	50.4
September	54.7	April '89	53.0
October	56.2	May '89	49.7
November	55.9	June '89	48.8
December	57.3		

The **Purchasing Managers' Index** (PMI) declined to 48.8% in June, down almost a point from 49.7% in May and the lowest since July 1986 (48.0%). This marks the second consecutive decline for this leading indicator, after 33 consecutive months of registering over 50%. A reading below 50 indicates that the economy is generally declining; above 50, that the economy is generally expanding. Bretz added, "The PMI has averaged 51.4% for the first half of 1989. Past experience indicates that if this average were to continue for the second half of 1989 it would be consistent with real GNP growth of about 2.3%. However, the PMI average for the second quarter, 50.5%, appears to be more consistent with real GNP growth closer to 2%. The PMI would have to fall below 44% before signalling negative real GNP."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

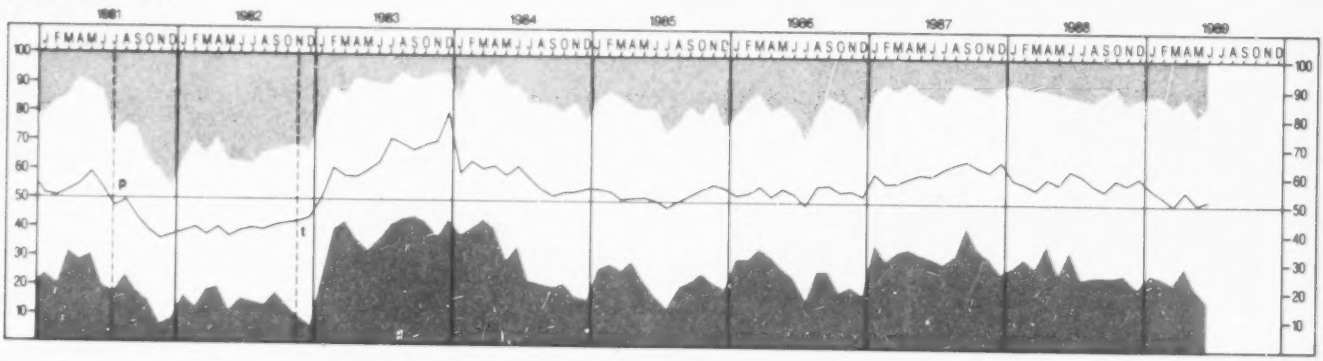
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("p" — July 1981) and trough ("t" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

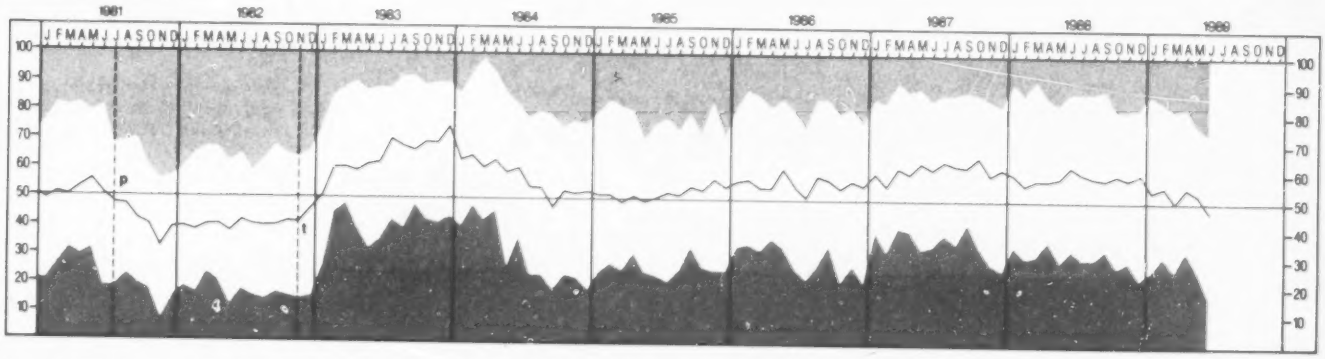
PRODUCTION



Production continued to expand in June for the 35th consecutive month. It remains the only indicator which has not registered a decline over the past few months. The Production index actually rose slightly to 52.4%, up from 51.1% in May.

Production	%Better	%Same	%Worse	Net	Index
June	18	67	15	+ 3	52.4
May	22	59	19	+ 3	51.1
April	30	58	12	+ 18	55.5
March	24	60	16	+ 8	50.7

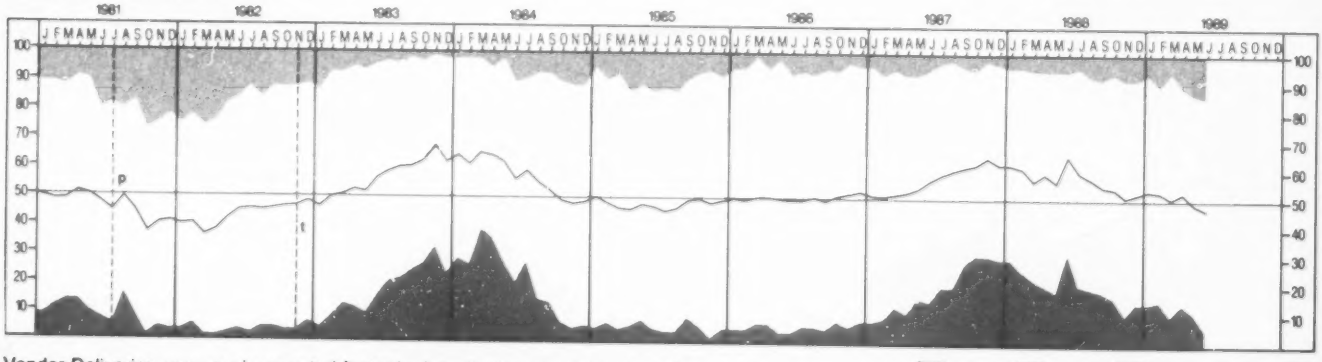
NEW ORDERS



New Orders declined in June, breaking a string of 48 consecutive months of expansion. The New Order index fell significantly to 47.2% from 53.4% in May and is the lowest since September 1984 (also 47.2%). An apparent reason for the sharp drop is the considerable slowing in New Export Orders in June.

New Orders	%Better	%Same	%Worse	Net	Index
June	18	56	26	- 8	47.2
May	27	50	23	+ 4	53.4
April	34	49	17	+ 17	55.3
March	27	55	18	+ 9	50.9

VENDOR DELIVERIES



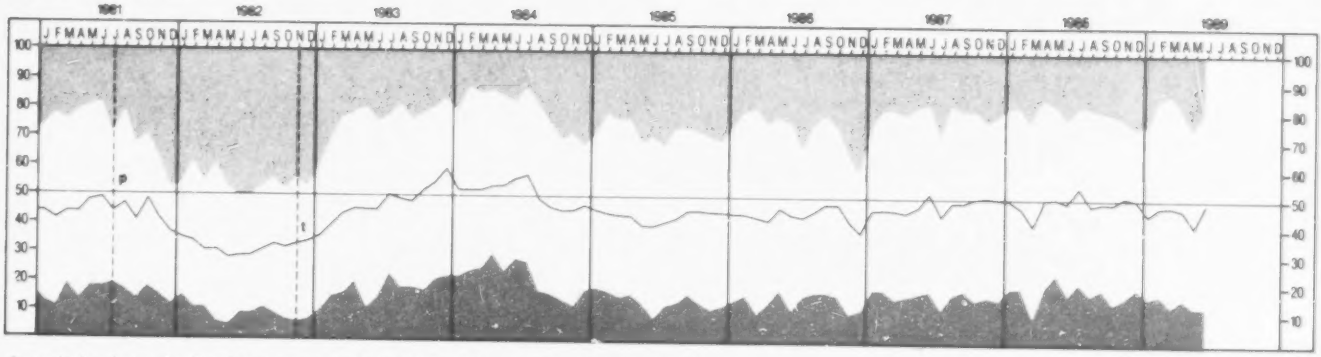
Vendor Deliveries were again reported faster in June for the second consecutive month after 31 consecutive months in which Vendor Deliveries were reported slower. The Vendor Deliveries index fell to 47.5%, down from 49.3% in May, and the lowest since August 1985 (46.6%) for this leading indicator. The number of commodities reported in short supply declined to 10, the fewest since October 1987(9).

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
June	6	80	14	- 8	47.5
May	12	75	13	- 1	49.3
April	15	74	11	+ 4	53.2
March	11	84	5	+ 6	51.2

IN SHORT SUPPLY:

Castings (7th time in 10 months), **Bleached Paperboard** (12th consecutive month but reported off allocation), **Acrylic Acid** (11th time in 12 months; used in manufacturing plastics), **Caustic Soda/ Soda Ash** (25th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Freon** (used heavily as a refrigerant and as aerosol propellants), **Sodium Chlorate** (used heavily in paper-making and dyeing), **Titanium Dioxide** (23rd consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Zircon** (3rd consecutive month; used in making glass), **Polyester** (5th consecutive month; reported to be on allocation), **Bearings** (11th consecutive month; a consequence of anti-dumping suits).

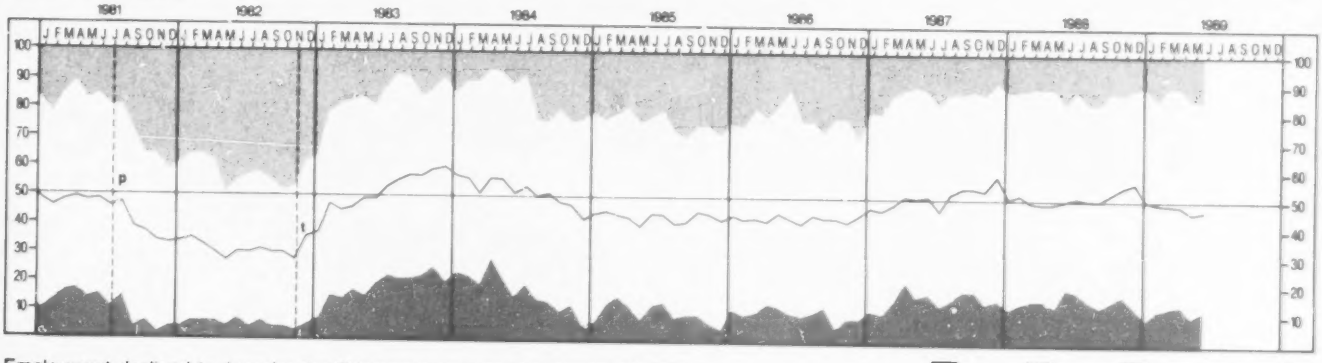
INVENTORIES



Inventories have declined in every month in 1989. This month's decline was not as severe as in May. The Inventories index (49.7%) was up from May (41.9%) and the nearest to growth since December 1988 (50.8%). Some purchasers indicated an increase in inventory from an unexpected slowing in demand in June. Others reported building a slight inventory of steel as a safeguard if some steel suppliers experience work interruptions due to termination of many steel industry labor contracts.

Inventories	%Higher	%Same	%Lower	Net	Index
June	14	68	18	− 4	49.7
May	14	61	25	− 11	41.9
April	17	64	19	− 2	47.4
March	14	73	13	+ 1	48.6

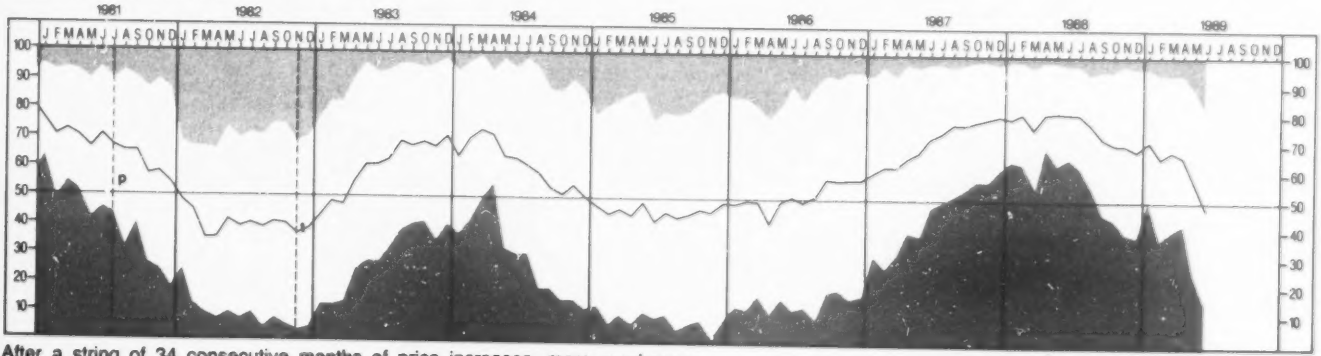
EMPLOYMENT



Employment declined in June for the fifth consecutive month. The Employment index registered 47.4% in June, up a point from 46.4% in May. The slowing in the decline in Employment may have been caused by an increase in temporary summer employees who fill in for vacationing permanent employees.

Employment	%Higher	%Same	%Lower	Net	Index
June	13	72	15	− 2	47.4
May	11	75	14	− 3	46.6
April	15	75	10	+ 5	49.2
March	14	76	10	+ 4	49.4

COMMODITY PRICES



After a string of 34 consecutive months of price increases, more purchasers reported price decreases than increases in June. The Price index plunged for the second consecutive month to 48.5%, down sharply from 57.6% in May and the lowest since April 1986 (42.8%). Mirroring this decline in prices is the decline in the number of commodities reported up in price (6), the fewest since December 1986 (3). Also, 17 commodities were reported lower in price, many of which were only recently reported as increasing in price.

Prices	%Higher	%Same	%Lower	Net	Index
June	16	66	18	− 2	48.5
May	25	65	10	+ 15	57.6
April	43	52	5	+ 38	66.5
March	41	54	5	+ 36	68.3

UP IN PRICE:

Bearings (11th time in 12 months), **Caustic Soda/Soda Ash** (31th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Glycerine** (used in various ways, especially as a sweetener in confectionaries, cosmetics, soaps and tobacco), **Sugar, Polyester** (7th consecutive month), **Fuel Oil** (7th consecutive month), **Natural Gas**.

DOWN IN PRICE:

Aluminum (3rd consecutive month, after being reported up in price in January for 22nd time in 24 months), **Brass** (reported up in price in March for 2nd time in 4 months), **Copper** (reported up in price in March for 21st time in 25 months), **Nickel** (reported up in price in April for 11th time in 14 months), **Zinc** (2nd consecutive month, after being reported up in price in April for 15th time in 16 months; used heavily in metal alloys and as a protective coating for metal), **Benzine** (used heavily in making medicinal chemicals, dyes, varnishes, lacquers and resins), **Ethylene** (2nd consecutive month; used heavily in making ethylene oxide, plastic resins and glycols), **Formaldehyde, Methanol** (5th time in 6 months; used heavily as a solvent and in synthesizing other chemicals), **Methyl Ethyl Keytone (MEK)** (3rd time in 4 months; used heavily as a chemical solvent in surface coatings and in making resins), **Phenol** (used heavily in making phenolic resins), **Phenolic Resin** (used in making plastic products), **Polyethylene Resin** (3rd consecutive month; used heavily in making packaging materials and paper coatings), **Polystyrene** (2nd consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic), **Styrene** (2nd consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic), **Soybean Oil** (used heavily in processed foods), **Diesel Fuel** (reported up in price in April).

BUYING POLICY

Lead times for Production Materials changed only slightly as purchasers reacted cautiously to improving deliveries and fewer shortages. The number of members reporting lead times of 30 days or less for Production Materials increased imperceptibly to 52%, up from 51% last month. Lead times for Capital Expenditures shortened somewhat. Members reporting lead times in the significant 6 months and longer category for Capital Expenditures declined to 53% in June, down from 55% in May and 56% in April. Lead times for Maintenance, Repair and Operating (MRO) Supplies decreased as the number of members reporting buying hand-to-mouth increased to 41%, up sharply from 37% last month.

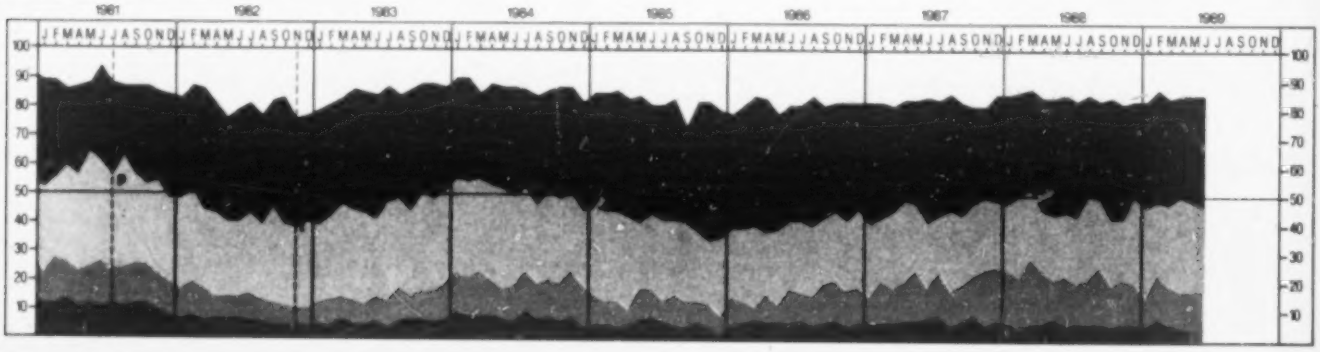
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
June	14	38	30	13	5
May	14	37	31	13	5
April	14	35	33	13	5
March	15	37	28	14	6

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
June	13	7	10	17	53
May	13	3	12	17	55
April	13	3	9	19	56
March	11	5	9	21	54

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
June	41	44	12	3	0
May	37	47	13	2	1
April	39	42	14	4	1
March	41	46	12	1	0

PRODUCTION MATERIALS



Commodity Report
June, 1989

NON-FERROUS METALS — Prepared by the NAPM Non-Ferrous Metals Committee. Chair: Sharon Sinke, C.P.M., C.L. Frost Inc., Grand Rapids, MI.

COPPER: The first half of 1989 for copper has been a period of uncertainty with many supply interruptions, high levels of consumption and correspondingly high prices. At the same time, interest rates have been rising to cool the economy and are now impacting copper consuming industries such as housing. Major Canadian, Chilean, and American producers have expiring mid-year labor contracts and potential for work stoppages. Worldwide inventories are adequate and slowly growing, with ready availability the norm globally. Aside from potential supply disruptions, stable to decreasing consumption, coupled with rising production and acknowledged costs of $.50–$.70/#, prices should continue the process begun in May, to gradually and steadily decline from recent levels.

LEAD: On June 1, 1989, lead was quoted at $0.37–38/lb. Expect prices to increase incrementally over the next couple months to a high of $0.42 to $0.44/lb. After the first of the year, when demand from battery manufacturers slackens, the price should drop back to the mid to high $0.30's/lb. Present U.S. supplies are tight with most primary and secondary smelters running at capacity. Demand by the battery industry is strong and is expected to remain so through the year-end. Expected new secondary smelting capacity has been delayed, causing demand to exceed supply. LME stocks are 34,000 metric tons lower than one year ago. This reduction, coupled with very strong demand from Asia, will ensure a strong world market through the remainder of 1989.

ZINC: Continued strong demand from consumers, coupled with supply disruptions from three North American producers, forced the U.S. zinc market into near panic in the first quarter. Producer Prices rose from $.75/lb. at the beginning of January to $.95/lb. at the end of February. Traders provided no relief, as their quotes topped $1.00/lb. at one point. During the second quarter, a long anticipated correction has occurred. As of mid-June, the Producer Price stands at $.80/lb. Spot material, which had been nearly impossible to acquire, is starting to reappear. A supply-demand balance has been reached; however, it is quite precarious. Any perceived or actual production loss, such as a labor problem at Noranda, could cause problems with availability and another price spike. Although demand for zinc is expected to flatten in the second half, prices are expected to stay above historical levels. No significant increases in mine or smelter production planned during the rest of 1989, price declines will probably be limited, although availability should continue to improve. A key indicator to watch is auto production, as any cutbacks may signal a slowdown in galvanizing and die-casting.

ENERGY — Prepared by NAPM Energy Committee. Chair, Howard T. Perley, C.P.M., International Paper, Memphis, TN.

PETROLEUM PRODUCTS: Greater demand, U.S. imports, and OPEC's apparent ability to limit production have caused unexpectedly high prices. Though some doubt that OPEC can maintain its production discipline, the supply-demand balance points to firm U.S. product prices.

NATURAL GAS: If you currently buy gas on a month-to-month spot price basis, consider switching to a twelve-month fixed price contract. Take advantage of summer price dips to lock in a firm price and avoid worries next winter. Make sure your contract does not contain a price-renegotiation clause.

ELECTRIC POWER: Many electric utilities are receptive to negotiating individual contracts for industry, and willing to work with industry to assure that the most economical tariffs are applied.

FUSION: The world's scientific community has been excited since the March 23 announcement of a revolutionary fusion energy experiment in Utah. Two chemists reported finding a simple, cheap way to produce fusion energy at room temperature using a beaker of heavy water and a platinum wound palladium rod. They claimed the experiment yielded four times the energy put into it. If the results prove valid, they could lead to a clean, virtually inexhaustible energy supply. But even the most optimistic forecasters feel it would be at least twenty years before this table top model could be scaled-up to commercial applications.

COAL: A new acid rain law in 1989 or 1990 appears more certain. With mandated decreases in SO_2 emissions, the coal industry is facing a spotted future. High sulfur coals are expected to lose 14% of their volume while low sulfur coal volumes could increase 40% by 1995. High sulfur coal prices will remain very soft while compliance coal prices may increase as much as 8% annually. Coal users should be considering long-term contracts with fixed prices for compliance coal, or evaluating the alternative costs of emission controls to take advantage of lower priced high sulfur coals.

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National Association of Purchasing Management

Report On Business®

August 1, 1989
Volume 7, Number 8

Economy Continues Decline: PMI at 46.0%

Price Index Also Down: Lowest Since April 1986

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, inc.

July Report

The economy declined in July for the third consecutive month, say the nation's purchasing executives in their latest ***Report On Business***. **Production** declined for the first time in three years. **New Orders** declined for the second consecutive month and the New Order Index is the lowest since November 1982, when this economic recovery began. **Inventories** registered the seventh consecutive decline as purchasers adjusted to slowing Production and New Orders, apparently unconcerned about the possibility of steel-mill work interruptions when many contracts are scheduled to expire July 31.

Although not as strong as last year, the strongest element of the economy continues to be **New Exports**. The number of members exporting rose to 72.9% from 71% in June, the fourth consecutive monthly increase. Of those who export, 22% reported better Export Orders, up from 18% in June. The 9% who reported worse Export Orders is identical to June. The seasonally unadjusted index of 56.5% is up from the 54.5% reported last month, which was the lowest since this index began in January 1988.

Prices declined for the second month after 34 consecutive months of increasing. Although 10 items were reported higher priced, 21 items were reported lower in price. **Vendor Deliveries** were faster for the third consecutive month and the Vendor Deliveries Index is at its lowest since August 1985. **Employment** fell for the sixth consecutive month as manufacturers continued to show reluctance to increase employment in the face of a slowing economy.

The **Report** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The economy quickened the pace of slower growth as it entered the third quarter. The manufacturing economy continued to decline for the third consecutive month as all indicators registered declines. Fortunately, inflation also continues to decline significantly and exports remain relatively strong."

PURCHASING MANAGERS' INDEX

Purchasing Managers' Index (PMI)

July	57.9	February '89	53.0
August	55.7	March '89	50.4
September	54.7	April '89	53.0
October	56.2	May '89	49.7
November	55.9	June '89	48.8
December	57.3	July '89	46.0
January '89	53.2		

The **Purchasing Managers' Index** (PMI) declined to 46.0% in July, down significantly from 48.8% in June and the lowest since January 1983 (also 46.0%). This leading indicator registered a decline in the manufacturing economy for three consecutive months after recording 33 consecutive months over 50%. A reading below 50 indicates that the manufacturing segment of the economy is generally declining; above 50, that it is generally expanding. Bretz added, "The PMI has averaged 50.6% for the first seven months of 1989. Past experience indicates that if this average were to continue for the balance of 1989, it would be consistent with real GNP growth of about 2.1%. However, the PMI average for the past four months, 49.4%, appears to be more consistent with real GNP growth closer to 1.7%. The PMI would have to fall below 44% before indicating negative real GNP."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

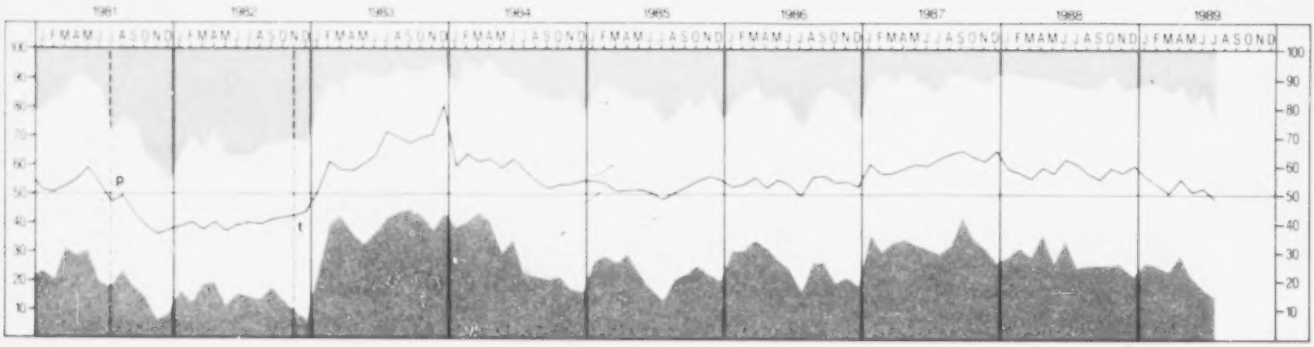
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak (P — July 1981) and trough (T — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

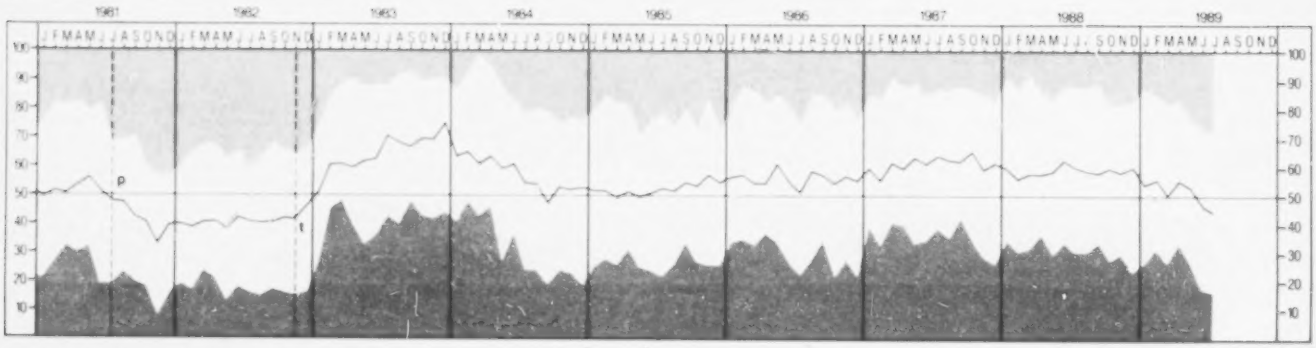
PRODUCTION



Production declined in July, breaking a string of 35 consecutive months of expansion. Production had been the only remaining indicator to continue showing growth, but took a sharp drop this month. The Production index fell to 48.3% in July, down from 52.4% in June and the lowest to be reported since July 1985 (48.2%).

Production	%Better	%Same	%Worse	Net	Index
July	15	59	26	- 11	48.3
June	18	67	15	- 3	52.4
May	22	59	19	- 3	51.1
April	30	58	12	- 18	55.5

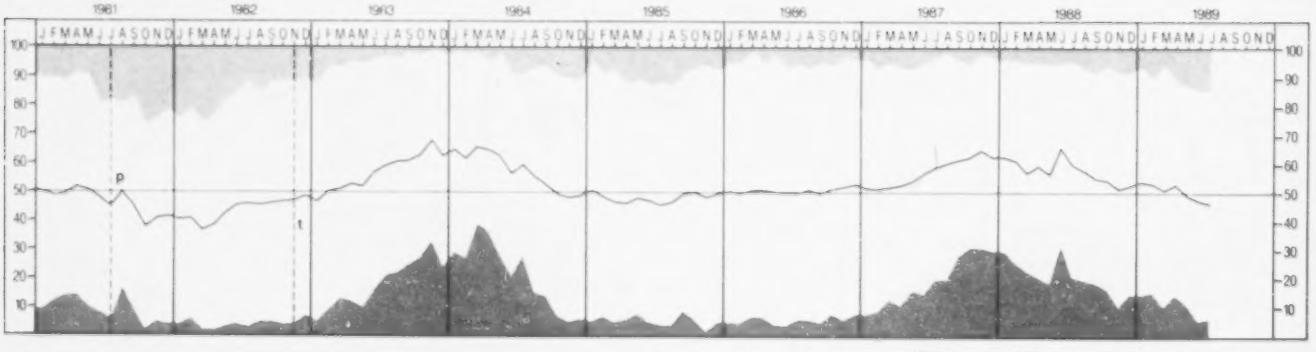
NEW ORDERS



New Orders declined in July, for the second consecutive month, after registering 48 continuous months of growth. The New Order index fell sharply to 44.8% from 47.2% in June and is the lowest since November 1982 (41.5%), which was both the trough of the previous recession and marked the beginning of our current economic recovery. Even the relatively strong growth in Export Orders was not sufficient to improve the overall outlook for New Orders.

New Orders	%Better	%Same	%Worse	Net	Index
July	17	55	28	- 11	44.8
June	18	56	26	- 8	47.2
May	27	50	23	+ 4	53.4
April	34	49	17	+ 17	55.3

VENDOR DELIVERIES



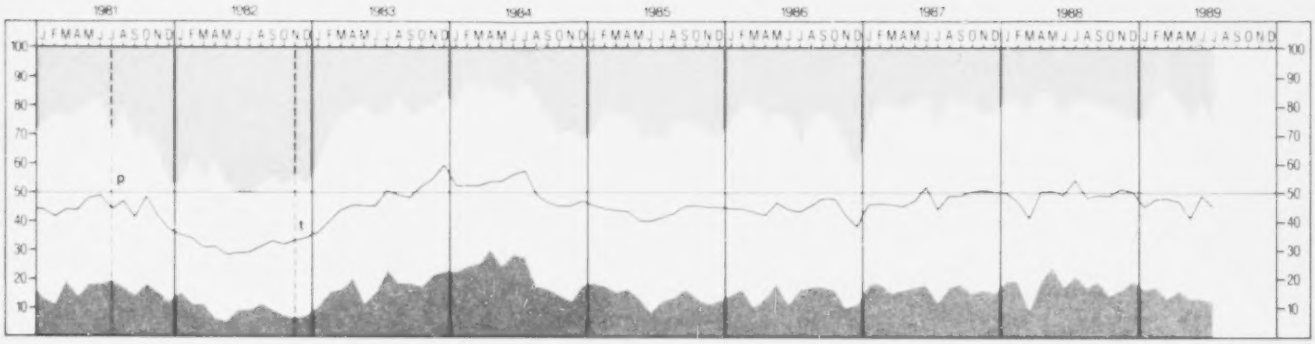
Vendor Deliveries were faster in July for the third consecutive month. The Vendor Deliveries index fell to 46.9%, down from 47.5% in June and the lowest since August 1985 (46.6%). Eight commodities were reported in short supply, down from 10 last month. Members expressed continued optimism about further easing in shortages (in the future).

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
July	7	79	14	- 7	46.9
June	6	80	14	- 8	47.5
May	12	75	13	- 1	49.3
April	15	74	11	+ 4	53.2

IN SHORT SUPPLY:

Castings (8th time in 11 months). **Bleached Paperboard** (13th consecutive month, but reported off allocation). **Acrylic Acid** (12th time in 13 months, used in manufacturing plastics). **Caustic Soda**. **Soda Ash** (26th consecutive month, used heavily in paper-making, petroleum refining and soap-making). **Sodium Chlorate** (2nd consecutive month, used heavily in paper-making and dyeing). **Titanium Dioxide** (24th consecutive month, lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications). **Polyester** (6th consecutive month, reported to be on allocation). **Bearings** (12th consecutive month, a consequence of anti-dumping suits).

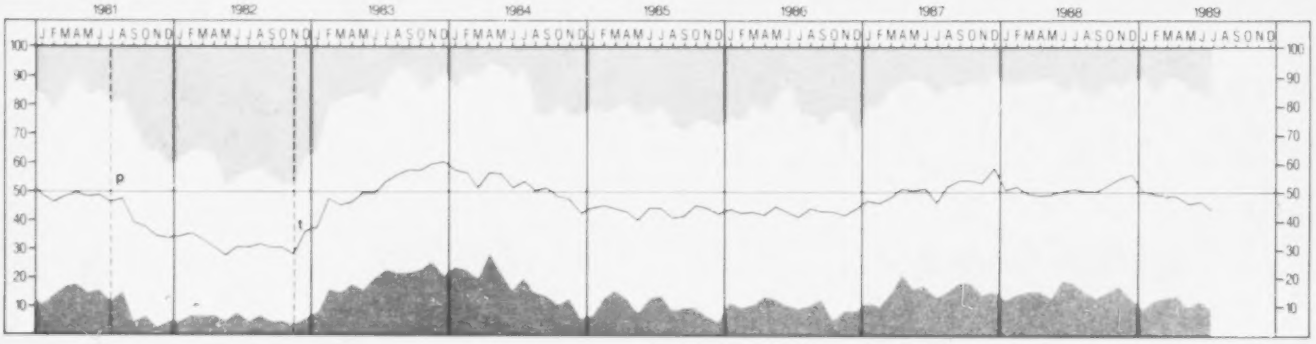
INVENTORIES



Inventories declined in July for the seventh consecutive month. The pace of decline quickened in July after slowing significantly in June, when numerous purchasers said they would increase steel inventories as a hedge against potential work interruptions at steel-mills where labor contracts were scheduled to expire on July 31. The Inventories index dropped to 45.5%, down sharply from 49.7% in June.

Inventories	%Higher	%Same	%Lower	Net	Index
July	13	60	27	-14	45.5
June	14	68	18	-4	49.7
May	14	61	25	-11	41.9
April	17	64	19	-2	47.4

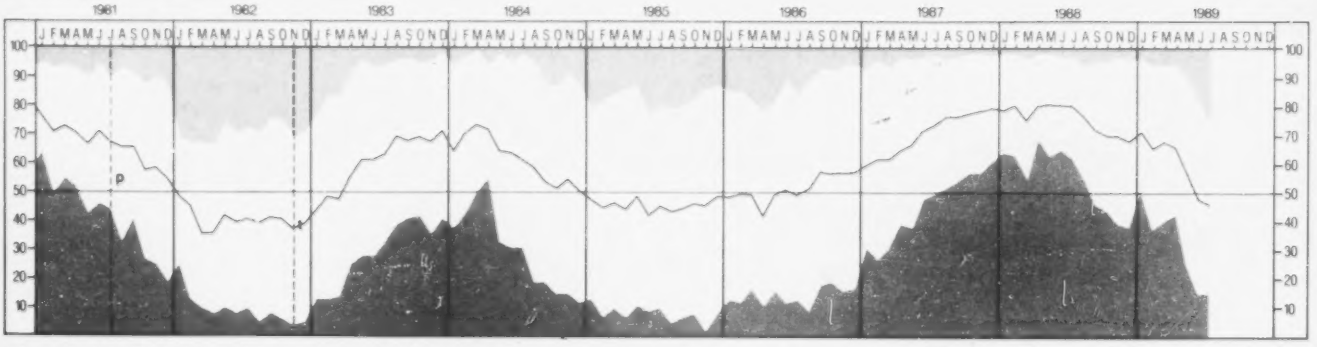
EMPLOYMENT



Employment declined in July for the sixth consecutive month. The rate of decline quickened after slowing in June. The Employment index registered 44.4%, down sharply from 47.4% in June, and the lowest since November 1986 (42.2%).

Employment	%Higher	%Same	%Lower	Net	Index
July	10	72	18	-8	44.4
June	13	72	15	-2	47.4
May	11	75	14	-3	46.6
April	15	75	10	+5	49.2

COMMODITY PRICES



Prices declined in July for the second month after increasing for 34 consecutive months. The Price index fell to 46.9% in July, down from 48.5% in June, and is the lowest since April 1986 (42.8%). Although 10 commodities were reported up in price, more than twice as many (21) were reported lower priced. Even the economic bellwether commodity, corrugated shipping containers, was reported down in price after many years of increasing prices.

Prices	%Higher	%Same	%Lower	Net	Index
July	16	61	23	-7	46.9
June	16	66	18	-2	48.5
May	25	65	10	+15	57.6
April	43	52	5	+38	66.5

UP IN PRICE:

Stainless Steel (15th time in 20 months), **Bearings** (12th time in 13 months), **Castings** (9th time in 12 months), **Electric Motors** (1st time since March), **Acrylonitrile Butadiene Styrene (ABS)** (A plastic resin used for injection molding), **Caustic Soda Soda Ash** (32nd consecutive month; some reports of price decreases; used heavily in paper-making, petroleum refining and soap-making), **Dyes,, Rubber** (3rd time in 7 months), **Bleached Paperboard, Corn Starch** (2nd time in 3 months).

DOWN IN PRICE:

Aluminum (4th consecutive month), **Copper** (2nd consecutive month), **Nickel** (2nd consecutive month), **Zinc** (3rd consecutive month; used heavily in metal alloys and as a protective coating for metal), **Steel Scrap, Corrugated Shipping Containers, Printing Paper, Benzine** (2nd consecutive month; used heavily in making medicinal chemicals, dyes, varnishes, lacquers and resins), **Ethylene** (3rd consecutive month; used heavily in making ethylene oxide, plastic resins and glycols), **Methanol** (6th time in 7 months; used heavily as a solvent and in synthesizing other chemicals), **Toluene** (used heavily in making explosives, dyes and benzoic acid; as a solvent in paint and as a gasoline additive), **Xylene** (used heavily in making benzoic acid, phathalic anhydride, polyester fibers and dyes), **Zinc Oxide** (used heavily as a pigment in white paints and inks; in cosmetics, driers, quick-setting cements and copier paper), **Phenol** (2nd consecutive month; used heavily in making phenolic resins), **Phenolic Resin** (2nd consecutive month; used in making plastic products), **Polyethylene Resin** (4th consecutive month; used heavily in making packaging materials and paper coatings), **Styrene** (3rd consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic), **Polyvinyl Chloride (PVC)** (a rubber substitute in wire and cable coating, pipe, tubing, textile finishes and belting), **Plastic Products, Fuel Oil** (after being reported up in price in June for 7th consecutive month), **Natural Gas** (after being reported up in price in June).

BUYING POLICY

Lead times for Capital Expenditures shortened as many companies reassessed their capital spending plans in light of decreasing demand. The number of members reporting lead times in the significant 6 months and longer category for Capital Expenditures declined to 52% in July, down from 53% in June and 57% in January, and the lowest since June 1988 (49%).

Lead times for Maintenance, Repair and Operating (MRO) Supplies also shortened as the number of purchasers reporting buying hand-to-mouth increased to 44%, up from 41% last month and from 34% in December and the highest since April 1987 (46%). However, lead times for Production Materials remained virtually unchanged as purchasing managers continued to react cautiously to significantly improving deliveries and less shortages. The number of members reporting lead times of 60 days or less for Production Materials was 83%, an increase from the reported 82% in June. However, the number reporting lead times of 6 months and longer dropped to 3% from 5% in the previous three months, the lowest since December 1985 (also 3%).

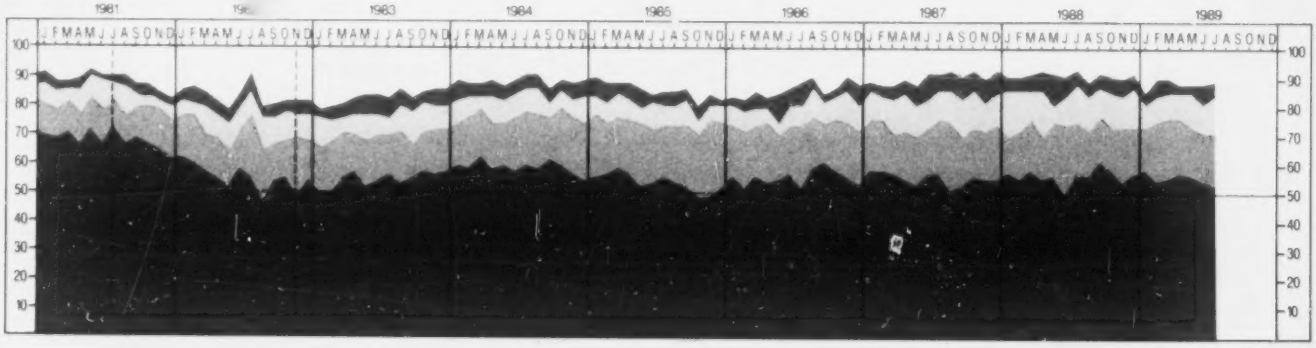
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
July	12	5	13	18	52
June	13	7	10	17	53
May	13	3	12	17	55
April	13	3	9	19	56

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
July	15	37	31	14	3
June	14	38	30	13	5
May	14	37	31	13	5
April	14	35	33	13	5

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
July	44	42	11	3	0
June	41	44	12	3	0
May	37	47	13	2	1
April	39	42	14	4	1

CAPITAL EXPENDITURES



Commodity Report
July, 1989

PACKAGING — Prepared by the NAPM Packaging Committee. Chair: Carl Dirkse, C.P.M., S.C. Johnson & Son, Inc., Racine, WI.

GENERAL: Packaging buyers appear to be back in the driver's seat. Prices are softening and availability is improving.

METAL CANS: Periodicals report price increases in cans, but our members' reports do not support this. Supply is adequate.

FIBRE CANS: Demand for fibre cans continues to decrease. Therefore, prices are stable and availability is adequate to surplus.

GLASS: Previously reported shortages have disappeared. Generally prices increased in April, but prices now seem to be stable.

MOLDED PLASTICS: Resins are now readily available and polypropylene is in surplus. Resin prices are dropping and, consequently, molded components are dropping accordingly.

FILMS: With resin prices dropping, film prices are also decreasing. Availability is adequate.

LAMINATED STOCK: Plastic resins are an important component in laminated stock, but prices are also impacted by paper and aluminum. Supply is generally adequate and prices are stable to decreasing.

METAL DRUMS: As usual, supply is more than adequate. Two members report price increases due to steel increases.

FIBRE DRUMS: Supply and demand seem to be in good balance. Prices are stable.

FOLDING CARTONS: This is the one packaging area that is a seller's market. Supplies are tight and lead times are long, particularly on SBS. A number of members report paying higher prices.

CORRUGATED: The corrugated market has changed dramatically. The $30/ton linerboard increase has been rescinded. Supplies are adequate to surplus. More members report price decreases than increases. Buyers appear to be bargaining very hard on this item.

BAGS: Prices and demand are strong for bleached paper bags and are somewhat softer for kraft paper and plastic bags. The competition between plastic and paper for the retail bag market is strong. Photodegradability and biodegradability are becoming important issues.

PAPER PRODUCTS — Prepared by the NAPM Paper Committee. Chairman: Glenn Farber, C.P.M., Vanier Graphics Corporation, Santee, CA.

NEWSPRINT: Readily available. Great deal of contract tonnage. Expect to be plentiful for next six months. Lots of new capacity starting up in next 18 months. Lead times down. Prices decreasing. Buyer's market.

UNCOATED GROUNDWOOD: Same condition as newsprint. Readily available. Lead times and prices both decreasing. Inventories decreasing. Should remain in good shape for some time.

COATED GROUNDWOOD: Readily available now and for next six months. Anticipate a 2.2% increase in capacity this year and 3.8% next. Lead times decreasing. Prices decreasing.

UNCOATED FREESHEET: Readily available. Lead times down. Prices down. Inventories being decreased but often not fast enough to keep up with decreasing demand. Allocations a thing of the past. Sellers again asking for orders, should continue at least another year to 18 months. 2.4% added capacity this year. Much more in 1990. Time to shop.

COATED FREESHEET: About same as uncoated freesheet. Discounting. Declining inventories. One supplier reports a good backlog for July — likely won't last. Demand soft; 9.5% capacity increase in 1989; 3% more in 1990. Buyer's market.

PAPERBOARD/LINERBOARD: Paperboard is only tight item in paper market. Buyers on allocation. SBS especially very tight. Lead times increasing. Prices increasing. Announced increase for July 1. Possibly more to come, but no added capacity and mills are full. Linerboard okay and recent attempted price increase has failed.

This is the last report by Glenn Farber, C.P.M., chair of the NAPM Paper Committee. The new chair is Richard Mastari, C.P.M. of Uarco, Inc., Barrington, IL.

This *REPORT ON BUSINESS* is published monthly by the National Association of Purchasing Management, Inc., 2055 East Centennial Circle, Post Office Box 22160, Tempe, Arizona 85285-2160. Telephone: 602 752-NAPM (752-6276). Telecopier: 602 752-7890. NAPM is the largest purchasing education and research organization in the United States, with close to 30,000 members. The REPORT has been issued by the Association each month since 1931, except for a brief hiatus during World War II. It is distributed 12 times a year to NAPM members. Additional subscriptions are $50 a year for members, $100 for nonmembers. Add $25 outside the United States, Canada and Mexico.

Note: The next issue of *REPORT ON BUSINESS* will be available September 1, 1989.

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National Association of Purchasing Management®

Report On Business®

September 1, 1989
Volume 7, Number 9

Economic Decline Worsens: PMI Slips To 45.2%

Price Index Plunges to 43.1%

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

August Report

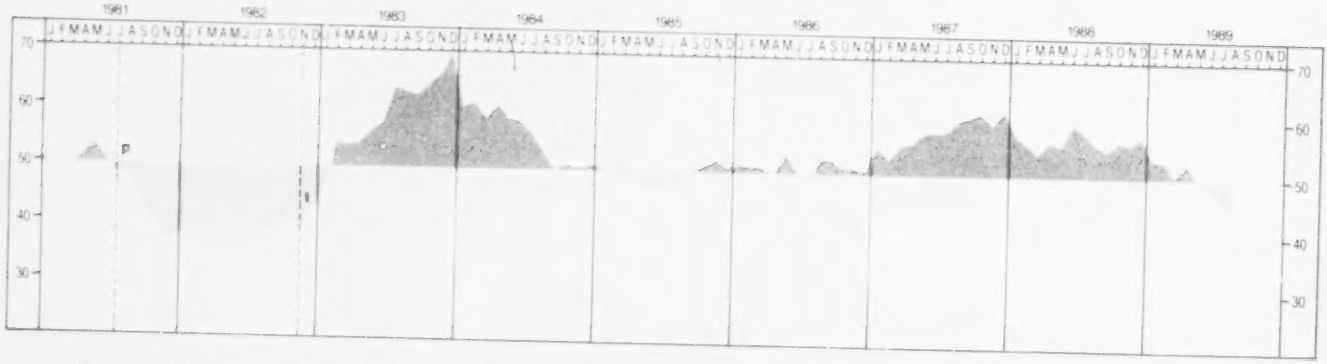
The economy declined in August for the fourth consecutive month, say the nation's purchasing executives in their latest ***Report On Business.*** The **Production** index fell for the second consecutive month and is the lowest since December 1982. **New Orders** also declined, but at a lesser rate than in July. **Inventories** declined for the eighth consecutive month as purchasers promptly adjusted to slowing **Production** and **New Orders. Employment** was lower for the seventh consecutive month, although at a lesser rate than last month.

The **New Export Orders** index slipped lower to 56.0%, down slightly from 56.5% in July, but still confirming that exports remain the strongest element of the economy. Of the 67.3% of members exporting, 23% reported better Export Orders, up from 22% in July. The 11% reporting worse Export Orders is up from 9% last month.

Prices plunged in August, the third consecutive month of decline. Perhaps more significant are the 29 items reported lower in price, up sharply from 21 items reported lower priced last month. Reflecting slowing demand, **Vendor Deliveries** were faster for the fourth consecutive month and the Vendor Deliveries index fell to its lowest level since May 1982.

The **Report** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The manufacturing economy continued down the path of decline for the fourth consecutive month. All indicators declined. The bright spots on the economic horizon continue to be relatively strong exports and sharply decreasing inflation."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index (PMI)

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September	54.7	April '89	53.0
October	56.2	May '89	49.7
November	55.9	June '89	48.8
December	57.3	July '89	46.0
January '89	53.2	August '89	45.2
February '89	53.0		

The **Purchasing Managers' Index** (PMI) declined to 45.2% in August, down from 46.0% in July and the lowest reading since December 1982. This is the fourth consecutive decline registered in the manufacturing economy. A reading below 50 indicates that the manufacturing segment of the economy is generally declining; above 50, that it is generally expanding. Bretz added, "The PMI has averaged 49.9% for the first eight months of 1989. Past experience indicates that if this average were to continue for the balance of 1989, it would be consistent with real GNP growth of about 1.9%. However, the PMI average for the past four months (47.4%) is probably more consistent with real GNP growth closer to 1.1%. Before indicating negative real GNP, the PMI would have to drop below 44%."

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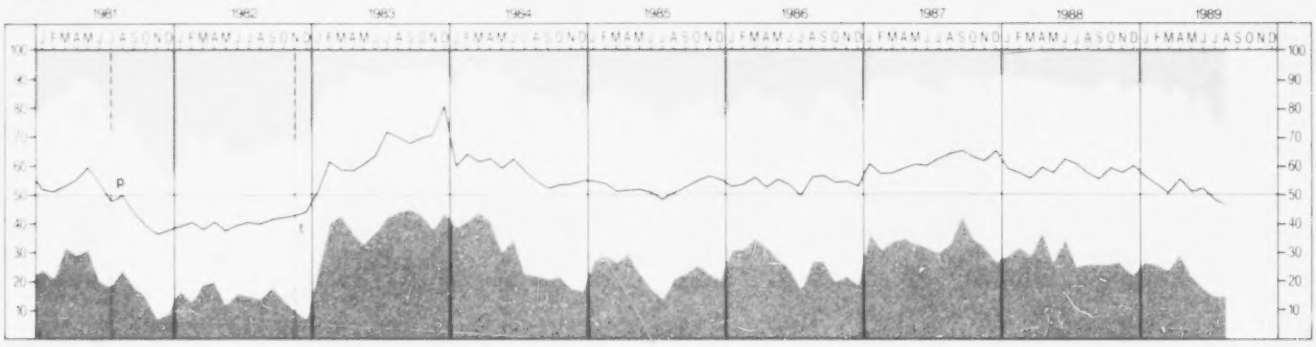
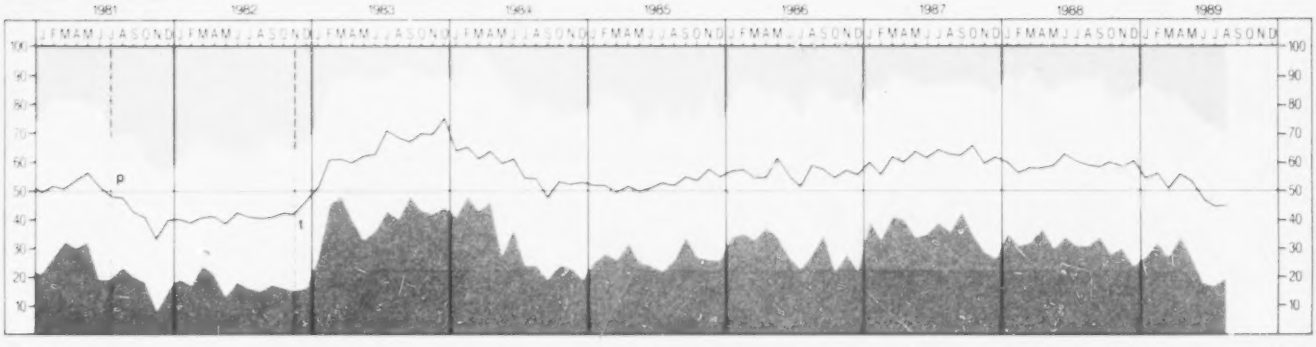
PRODUCTION



Production declined in August for the second consecutive month. The Production index dropped to 46.5%, down from 48.3% in July. At 46.5%, the Production index is at its lowest point since December 1982 (44.0%).

Production	%Better	%Same	%Worse	Net	Index
August	15	61	24	- 9	46.5
July	15	59	26	- 11	48.3
June	18	67	15	+ 3	52.4
May	22	59	19	+ 3	51.1

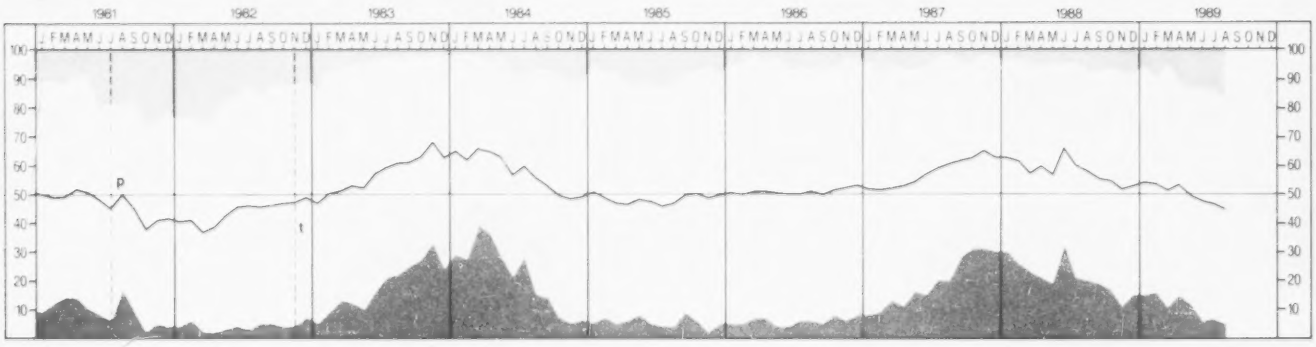
NEW ORDERS



New Orders declined in August for the third consecutive month. The New Orders index registered 45.1%, up slightly from 44.8% in July. Although declining at a somewhat lesser rate than last month, the New Order index is still the lowest since November 1982 (41.5%), which was both the trough of the previous recession and the beginning of our current economic recovery.

New Orders	%Better	%Same	%Worse	Net	Index
August	20	49	31	- 11	45.1
July	17	55	28	- 11	44.8
June	18	56	26	- 8	47.2
May	27	50	23	+ 4	53.4

VENDOR DELIVERIES



Vendor Deliveries were faster in August for the fourth consecutive month, reflecting the significant easing in demand for materials. The Vendor Deliveries index fell to 44.9%, down from 46.9% last month and the lowest since May 1982 (42.1%). Nevertheless, the number of commodities reported in short supply increased to 12, up from eight in July and 10 in June.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
August	5	78	17	- 12	44.9
July	7	79	14	- 7	46.9
June	6	80	14	- 8	47.5
May	12	75	13	- 1	49.3

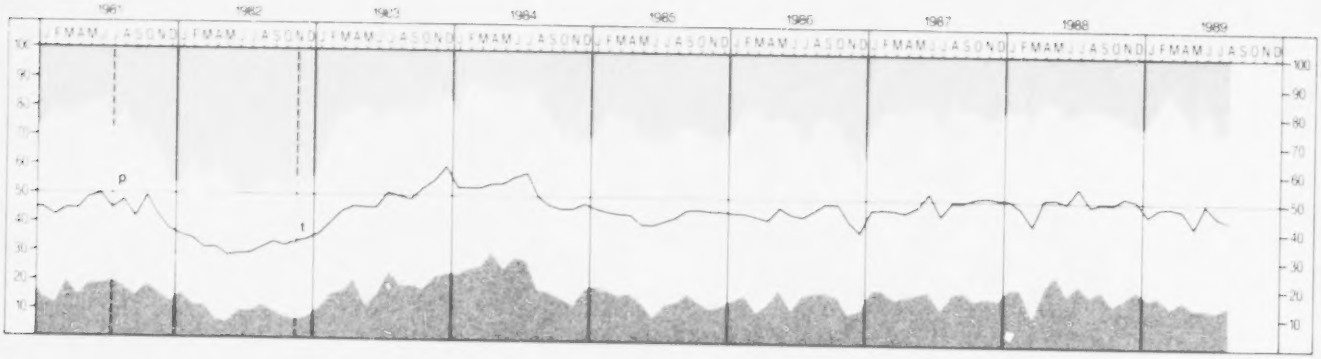
IN SHORT SUPPLY:

Castings (9th time in 12 months), **Stainless Steel** (1st time since March 1989), **Bleached Paperboard** (14th consecutive month, but reported off allocation), **Acrylic Acid** (13th time in 14 months; used in manufacturing plastics), **Caustic Soda Soda Ash** (27th consecutive month; used heavily in paper-making, petroleum refining and soap-making), **Sodium Chlorate** (3rd consecutive month; used heavily in paper-making and dyeing), **Titanium Dioxide** (25th consecutive month; lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications), **Freon** (2nd time in 3 months; used heavily as a refrigerant and as aerosol propellants), **Polyester** (7th consecutive month; reported to be on allocation), **Rayon** (7th time in 10 months), **Bearings** (13th consecutive month; a consequence of anti-dumping suits), **Motors** (3rd time in 5 months).

UP IN PRICE:

Bearings (13th time in 14 months), **Castings** (10th time in 13 months), **Capacitors** (used heavily in consumer and industrial electronic products), **Acetone** (a solvent for fats, oils, waxes, resins, rubber, plastics, lacquer and varnishes), **Caustic Soda Soda Ash** (33rd consecutive month), **Titanium Dioxide** (3rd time in 5 months; a lead-free pigment used heavily as a whitener in coatings, paints, paper and other industrial applications), **Bleached Paperboard** (2nd consecutive month), **Woodpulp** (used in making all grades of paper and linerboard), **Milk Products.**

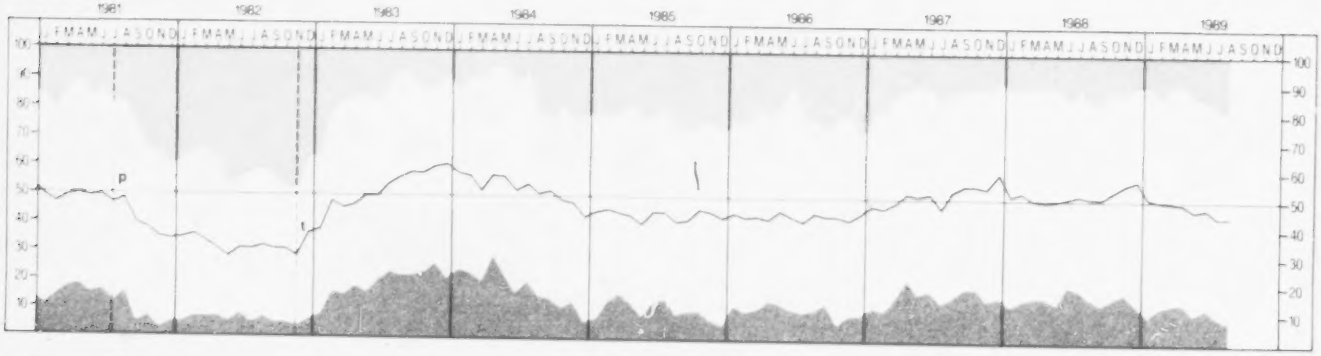
INVENTORIES



Inventories declined in August for the eighth consecutive month. The drop mirrored the significant improvement in Vendor Deliveries and considerably lower demand for materials. The Inventories index fell to 43.3%, down from the 45.5% reported last month as purchasers again avoided inventory overhang.

Inventories	%Higher	%Same	%Lower	Net	Index
August	15	59	26	11	43.3
July	13	60	27	14	45.5
June	14	68	18	4	49.7
May	14	61	25	11	41.9

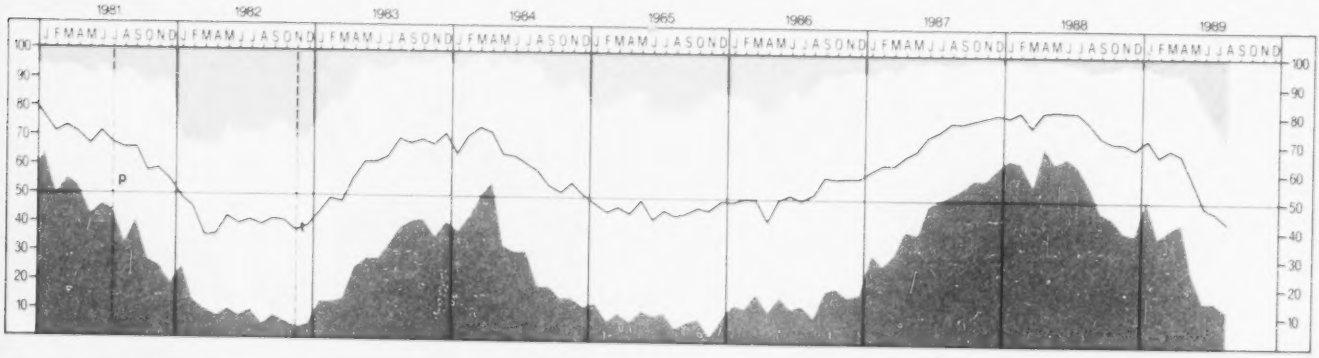
EMPLOYMENT



Employment declined in August for the seventh consecutive month, although the pace of the decline was not as great as in July. The Employment index registered 44.7%, up slightly from 44.4% last month, but still the lowest since December 1986 (44.5%), except for July.

Employment	%Higher	%Same	%Lower	Net	Index
August	8	72	20	12	44.7
July	10	72	18	8	44.4
June	13	72	15	2	47.4
May	11	75	14	3	46.6

COMMODITY PRICES



Prices declined in August for the third consecutive month. The Price index plunged to 43.1%, sharply lower than 46.9% in July and a world apart from January's 71.6%. The Price index at 43.1% is the lowest since April 1986 (42.8%). The number of commodities reported lower in price rose meaningfully to 29 from 21 in July while only nine items were reported higher priced.

Prices	%Higher	%Same	%Lower	Net	Index
August	13	57	30	- 17	43.1
July	16	61	23	- 7	46.9
June	16	66	18	- 2	48.5
May	25	65	10	+ 15	57.6

DOWN IN PRICE:

Aluminum (5th consecutive month), **Brass** (after being reported up in price in March for 2nd time in 4 months), **Copper** (3rd consecutive month), **Nickel** (3rd consecutive month; used heavily in making stainless steel, plating metals and batteries), **Zinc** (4th consecutive month; used heavily in metal alloys and as a protective coating for metal), **Steel Scrap,** (2nd consecutive month), **Ferroalys, Printing Paper,** (2nd consecutive month, after being reported up in price in April for 25th time in 28 months), **Alcohols,** (used as a solvent in laboratories and in industry), **Benzine** (3rd consecutive month; used heavily in making medicinal chemicals, dyes, varnishes, lacquers and resins), **Ethylene** (4th consecutive month; used heavily in making ethylene oxide, plastic resins and glycols), **Methanol** (7th time in 8 months; used heavily as a solvent and in synthesizing other chemicals), **Toluene** (2nd consecutive month; used heavily in making explosives, dyes and benzoic acid; as a solvent in paint and as a gasoline additive), **Phthalic Anhydride** (used heavily in making artificial resins, benjoic acid and phthalates), **Plasticizers** (used in making rubber and plastic resins), **Plastic Resins** (after being reported up in price in April for 20th time in 21 months), **Phenolic Resin** (3rd consecutive month; used in making plastic products), **Polyethylene Resin** (5th consecutive month; used heavily in making packaging materials and paper coatings), **Styrene** (4th consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic), **Polystyrene** (used chiefly in making synthetic rubber, plastic resins and plastic), **Polyvinyl Chloride (PVC)** (2nd consecutive month; a rubber substitute in wire and cable coating, pipe, tubing, textile finishes and belting), **Polypropylene** (5th time in 7 months; used in making fabrics, carpets and yarns), **Plastic Products** (2nd consecutive month), **Tools, Sulfur** (used heavily in making matches, gunpowder, sulfuric acid, plastics, enamels and bleaching woodpulp), **Natural Gas** (2nd consecutive month, after being reported up in price in June), **Black Pepper, Corn, Soybean Oil** (used heavily in processed foods).

BUYING POLICY

Lead times for Production Materials shortened somewhat reflecting the improvement in Vendor Deliveries. The number of purchasers reporting lead times of 30 days or less for Production Materials was 55%, up from 52% in July and June.

Lead times for Capital Expenditures remained virtually unchanged from July. The number of members reporting lead times in the important 6 months and longer category was unchanged from last month at 52%. Nevertheless, the 52% is the fewest since June 1988 (49%).

Lead times for Maintenance, Repair and Operating (MRO) Supplies shortened again for the third consecutive month. Members reporting buying hand-to-mouth increased to 48%, up from 44% last month, 41% in June and 37% in May. The 48% is the most since January 1987 (50%).

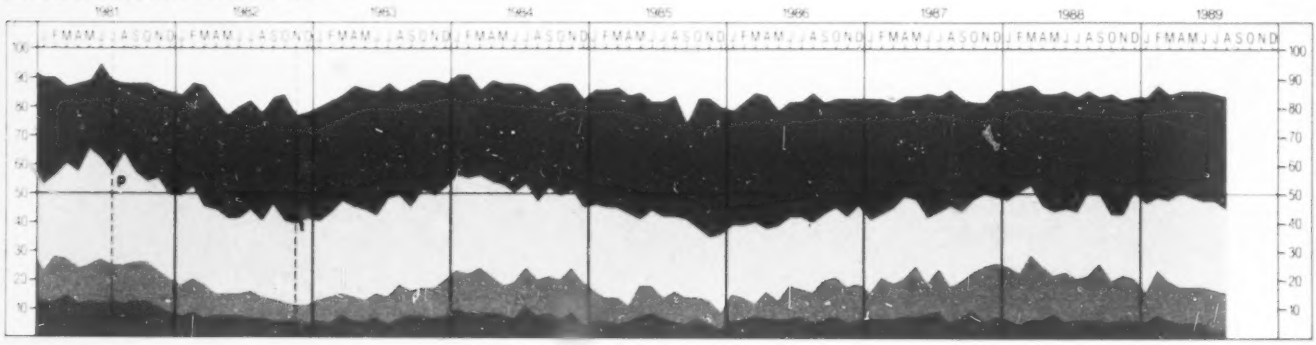
Percent Reporting

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos and Longer
August	16	39	29	13	3
July	15	37	31	14	3
June	14	38	30	13	5
May	14	37	31	13	5

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos and Longer
August	12	6	12	18	52
July	12	6	13	18	52
June	13	7	10	17	53
May	13	3	12	17	55

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
August	48	36	13	1	2
July	44	42	11	3	0
June	41	44	12	3	0
May	37	47	13	2	1

PRODUCTION MATERIALS



Commodity Report
August 1989

STEEL — Prepared by the NAPM Steel Committee. James Lawrence, Commercial Intertech, Youngstown, Ohio.

The tide has turned on the domestic steel industry. The seller's market of the past is changing to a buyer's market. In most categories of U.S. steel purchasing demand has softened or noticeably declined. Automotive sales are down by double-digit percentages in recent months. Heightened interest rates have had their effect, and national and free-world economies are in a lull which appears to be more than seasonal. Downward price adjustments and much shortened lead times indicate a definite slump in steel's sales projections for the second half of 1989.

The NAPM Steel Buyers Survey reports an increasing number (52%) indicate that steel receipts for the next three months should be less than current receipts. Expect backlogs and incoming orders to decrease rather than increase. At a three-year high, 82% of respondents expect no steel shortages over the next six months.

Labor negotiations with four major integrated steel producers have been settled, all on an ascending labor cost trend, and assure the U.S. of ample production capacity for the present. A question remains whether sufficient demand exits to fill that capacity. A possibility lingers that many profitable basic steel companies may find their profits squeezed.

Although the Voluntary Restraint Agreement (VRA) has been renewed with modifications, the leading indicators of a resurgence in the domestic steel industry are still the value of the U.S. dollar and domestic interest rates. A drop in both indicators or in the dollar alone would help by impeding imports and aiding the export of American-made steel.

A gradual but significant drop in world spot-market prices for common grades of steel indicates a growing world-wide slow down in demand creating foreign steel activity in the U.S.

The Bush Administration's promise to discourage other governments from subsidizing their steel producers and consequently dumping steel on the world and U.S. markets is an ambitious but very optimistic venture, especially inside the two and one-half year extension period of the VRA's.

On the plus side is the improvements domestic steel made recently in efficiency and productivity. These much leaner suppliers also appear to be making giant strides in rededication to quality of product and customer service. The dramatic changes made over the past few years are evidence revamping of the U.S. Steel industry is well underway.

ENERGY — Prepared by NAPM Energy Committee. Chair, Howard T. Perley, C.P.M., International Paper, Memphis, TN.

PETROLEUM PRODUCTS: Crude oil prices eased from an average of $20 BBL to $18 BBL. Milder summer temperatures produced an over supply of Residual Fuels and Distillates, and prices have fallen $1–$2 BBL. Stricter environmental restrictions and enforcement, however, will result in a higher premium for the lower sulfur fuels.

NATURAL GAS: Be prepared for somewhat worse gas curtailments this winter. U.S. gas reserves have diminished steadily in recent years. Deliverability problems on interstate pipelines could result from the higher percentage of gas bought month to month as spot purchases (both by end users and local gas utilities). Review your contingency curtailment plans before winter.

ELECTRIC POWER: Under ordinary circumstances, electric power rates should increase by considerably less than the inflation rate. Fuel costs remain relatively stable and little new construction is planned. Buyers should be aware of the effect various proposals for acid rain legislation may have on the rates of specific utilities.

COAL: With acid rain legislation finally nearing reality, these are the best and the worst of times for coal producers — and buyers. Coal could soon be divided into two distinct markets. Low sulfur, low ash, compliance coal will see a marked increase in demand. The high sulfur, "dirty" coals will find fewer willing buyers.

Average prices for coal will probably follow GNP inflation quite closely. However with the prospect to rapid increases in the prices of compliance coal, long-term contracts with limited escalation rates should be of interest to these buyers. Better prices may be available later for other coals in lesser demand.

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Note: The next issue of *REPORT ON BUSINESS* will be available October 2, 1989.

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National Association of Purchasing Management

Report On Business®

October 2, 1989
Volume 7, Number 10

Economic Decline Eases: PMI Rises To 46.0%

Prices Continue Sharp Decline

Analysis by the National Association of Purchasing Management Business Survey Committee; chair, Robert J. Bretz, C.P.M., director of materials management, Pitney Bowes, Inc.

September Report

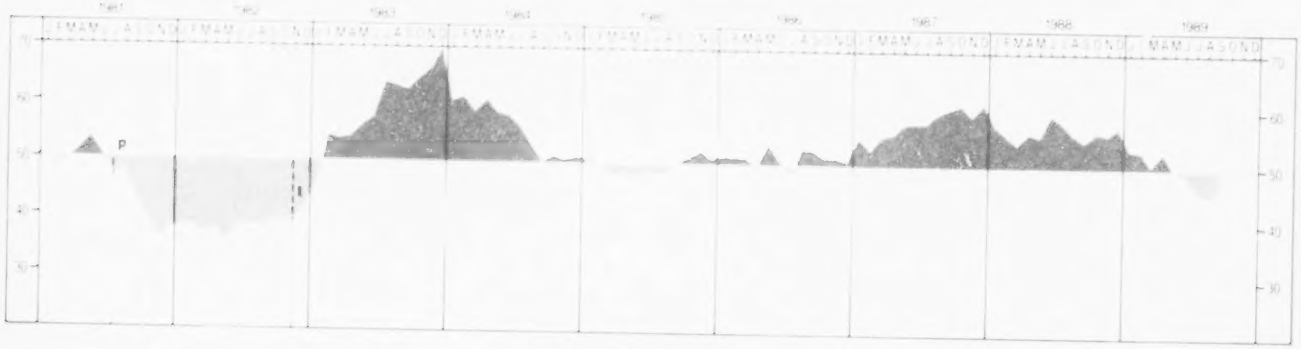
The economy declined in September for the fifth consecutive month, but at a lesser rate than last month, say the nation's purchasing executives in their latest ***Report On Business***. The **Production** index declined for the second consecutive month but at a slower pace than in August and July. **New Orders** declined for the fourth consecutive month, but not as steeply as in the previous two months. **Inventories** declined for the ninth consecutive month and **Employment** for the eighth consecutive month, although both declines were at a slower rate than the previous month.

The **New Export Orders** index registered 60.5%, up sharply from 56.0% in August and the highest since April (62.0%). Of the 70% of members exporting, 27% reported better Export Orders, up from 23% in August. The 6% reporting worse Export Orders is down from 11% last month.

Prices declined for the fourth consecutive month at the same rate as in August. A total of 25 items was reported lower in price and only nine higher priced. The **Vendor Deliveries** index fell to 43.8%, the fifth consecutive month of decline. The Vendor Deliveries index was the only indicator to decline at a greater rate than in August.

The **Report** was issued today by Robert J. Bretz, C.P.M., chairman of the National Association of Purchasing Management's Business Survey Committee, and director of materials management at Pitney Bowes, Inc. Said Bretz, "The manufacturing economy ended the third quarter with the fifth consecutive monthly decline. Other than Vendor Deliveries, the pace of the decline eased in September compared to last month. The best news continues to be the significant increase in growth in Export Orders and sharply decreasing prices."

PURCHASING MANAGERS' INDEX



Purchasing Managers' Index (PMI)

September	54.7	April '89	53.0
October	56.2	May '89	49.7
November	55.9	June '89	48.8
December	57.3	July '89	46.0
January '89	53.2	August '89	45.2
February '89	53.0	September '89	46.0
March '89	50.4		

The **Purchasing Managers' Index** (PMI) edged higher to 46.0% in September, up from 45.2% in August and exactly where it was in July. This is the fifth consecutive month of decline registered in the manufacturing economy. Except for August, the index is the lowest since December 1982. A reading below 50 indicates that the manufacturing economy is generally declining; above 50, that it is generally expanding. Bretz added, "The PMI has averaged 49.5% for the first three quarters of 1989. Past experience indicates that if this average were to continue for the final quarter, it would be consistent with real GNP growth of about 1.7% for all of 1989. However, the PMI average for the third quarter (45.7%) is probably more consistent with real GNP closer to 0.6%. The PMI would have to fall below 44% before indicating negative real GNP."

Data and method of presentation

The *Report on Business* is based on data compiled from monthly replies to questions asked of purchasing executives in over 250 industrial companies. Membership of the Business Survey Committee is diversified geographically, based on value added by state, and by Standard Industrial Classification (SIC) category, based on each industry's contribution to Gross National Product (GNP). Twenty-one industries in 50 states are represented on the committee.

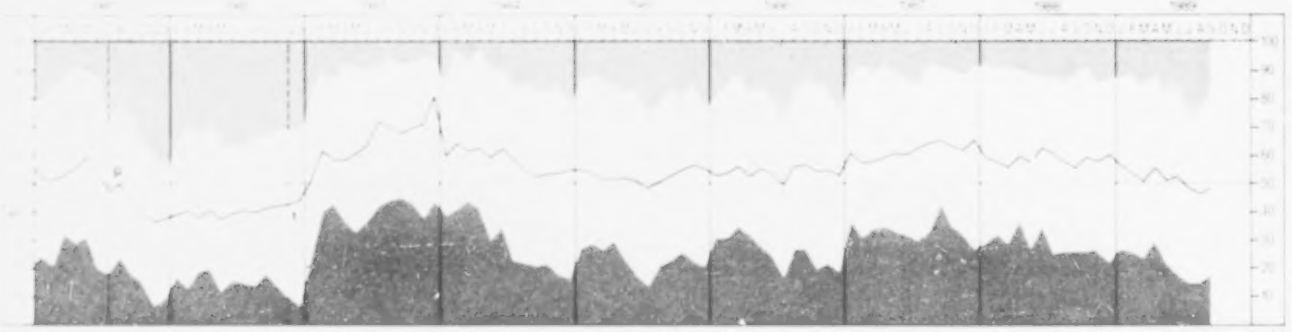
Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (new orders, production, vendor deliveries, inventories, employment and prices), this report shows:

- the percent reporting each response;
- the net difference between the number of responses in the positive economic direction (higher, better — and slower for vendor deliveries) and the negative economic direction (lower, worse — and faster for vendor deliveries);
- the diffusion index.

The charts provide a basis for comparing current data with the historical pattern. The dotted vertical lines on each chart indicate for the period shown the official peak ("P" — July 1981) and trough ("T" — November 1982) of the economy as determined by the National Bureau of Economic Research. The percentage of responses in the positive economic direction are shown in blue, the negative in red, and the same in white. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses, plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to minor changes when conditions warrant them. The Purchasing Managers' Index is a composite index based on the seasonally adjusted diffusion indexes for five of the indicators (new orders, production, vendor deliveries, inventories and employment) with varying weights applied.

Diffusion indexes have the properties of leading indicators and are convenient summary measures showing the prevailing direction of change and the scope of change. An index reading above 50% indicates that the economy is generally expanding; below 50% generally declining. The distance from 50% is indicative of the strength of the expansion or decline.

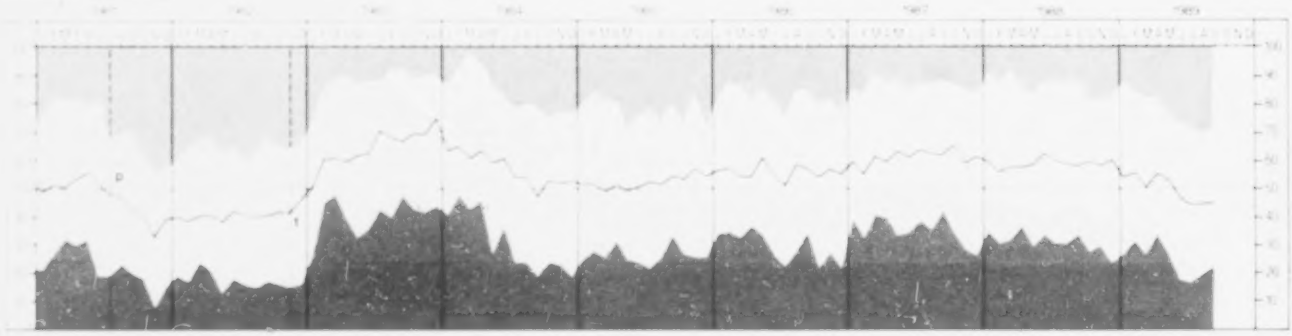
PRODUCTION



Production declined in September for the third consecutive month. However, the Production index rose two points to 48.5%, up from the 46.5% reported last month. The latest index is slightly higher than 48.3% in July, which was the first month of decline.

Production	%Better	%Same	%Worse	Net	Index
September	18	64	18	0	48.5
August	15	61	24	-9	46.5
July	15	59	26	-11	48.3
June	16	67	15	1	52.4

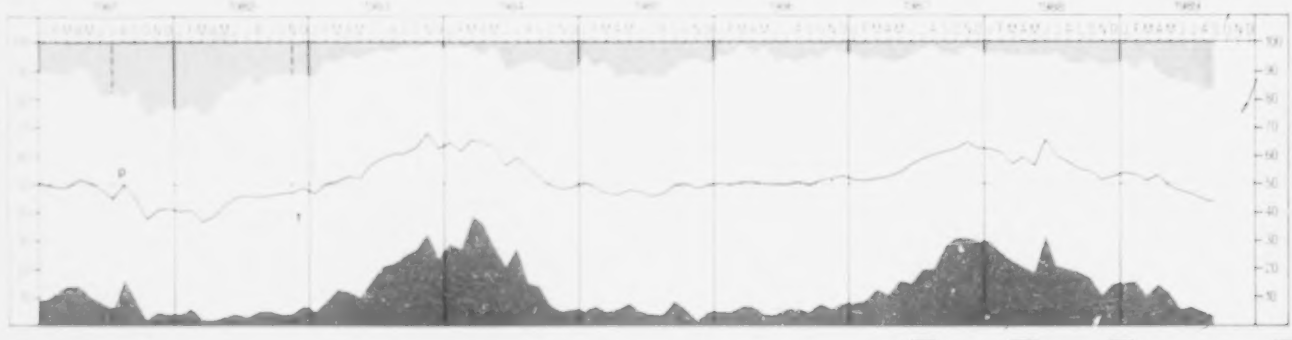
NEW ORDERS



New Orders declined in September for the fourth consecutive month, although at a somewhat slower pace. The New Orders index rose slightly to 45.4%, up from 45.1% in August. Although September was the second consecutive increase in the New Order index, except for July and August, it is still the lowest since November 1982 (41.5%), which was the trough of the previous recession and the beginning of our present economic recovery.

New Orders	%Better	%Same	%Worse	Net	Index
September	23	50	27	-4	45.4
August	20	49	31	-11	45.1
July	17	55	28	-11	44.8
June	18	56	26	-8	47.2

VENDOR DELIVERIES



Vendor Deliveries were faster in September for the fifth consecutive month, mirroring the continued decline in demand and greater availability. The Vendor Deliveries index fell for the fifth consecutive month and, at 43.8%, is the lowest since May 1982 (42.1%). The improvement in availability was further confirmed by the drop in the number of items in short supply to eight, down from 12 in August.

Vendor Deliveries	%Slower	%Same	%Faster	Net	Index
September	4	80	16	12	43.8
August	5	78	17	12	44.9
July	7	79	14	-7	46.9
June	6	80	14	-8	47.5

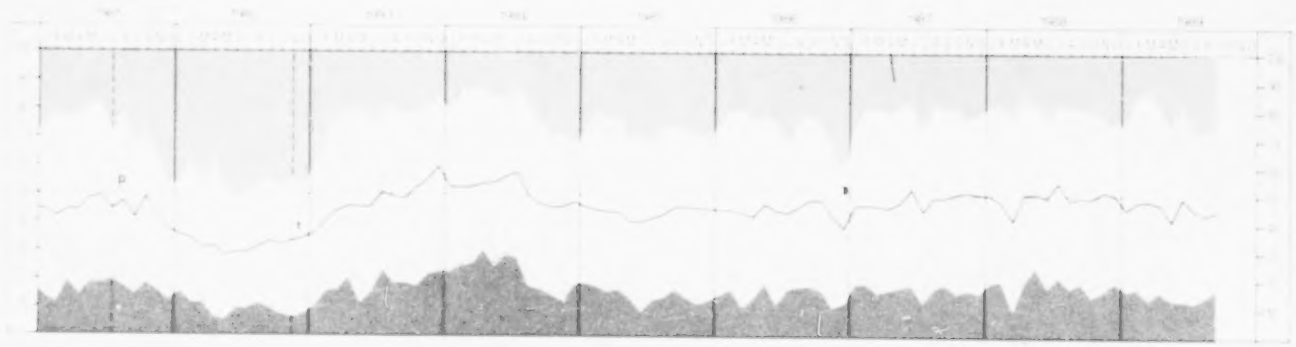
IN SHORT SUPPLY:

Castings (10th time in 13 months). **Bleached Paperboard** (15th consecutive month, but reported off allocation). **Acrylic Acid** (14th time in 15 months, used in manufacturing plastics). **Caustic Soda Soda Ash** (28th consecutive month, used heavily in paper making, petroleum refining and soap making). **Sodium Chlorate** (4th consecutive month, used heavily in paper making and dyeing). **Titanium Dioxide** (26th consecutive month, lead-free pigment used as a whitener in coatings, paints, paper and other industrial applications). **Bearings** (14th consecutive month, a consequence of anti-dumping suits). **Milk** (used in food processing).

UP IN PRICE:

Copper (After being reported down in price in August for 3rd consecutive month). **Lead** (After being reported down in April, used heavily in making paints, petroleum, pipe and batteries). **Bearings** (14th time in 15 months). **Castings** (11th time in 14 months). **Capacitors** (used heavily in consumer and industrial electronic products). **Electric Motors** (2nd time in 3 months, industry is capacity restrained). **Caustic Soda Soda Ash** (34th consecutive month, used heavily in paper-making, petroleum refining and soap-making). **Epoxy Resin** (used chiefly in coatings and adhesives). **Rayon**.

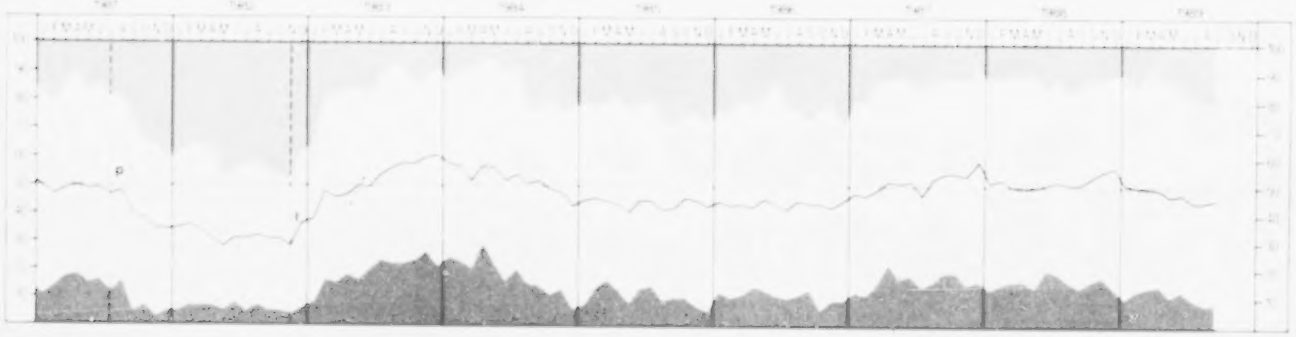
INVENTORIES



Inventories declined for the ninth consecutive month although the rate of decrease was less than in August. The Inventories index rose to 45.1%, up from 43.3% last month. Purchasers remain intent on keeping inventories in line with production demands.

Inventories	%Higher	%Same	%Lower	Net	Index
September	18	56	26	-8	45.1
August	15	59	26	-11	43.3
July	13	60	27	-14	45.5
June	14	68	18	-4	49.7

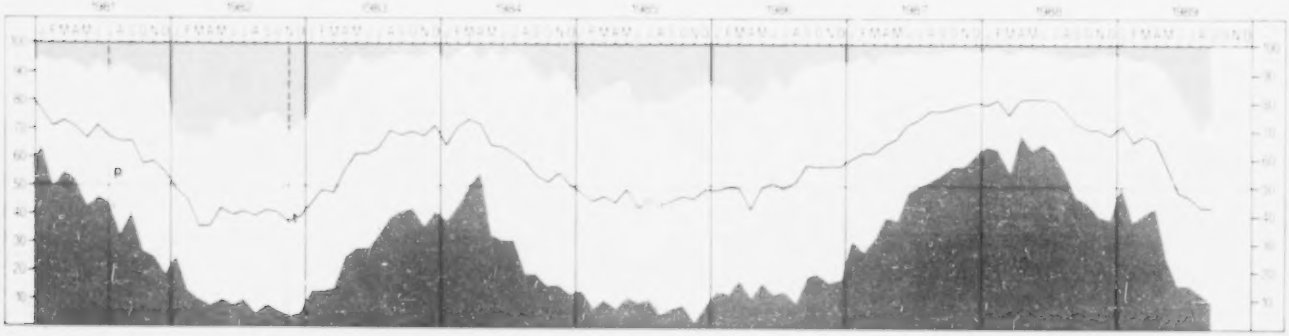
EMPLOYMENT



Employment declined in September for the eighth consecutive month, although the rate of the decline was not as much as in August. The Employment index registered 45.9%, up from 44.7% last month and from 44.4% in July.

Employment	%Higher	%Same	%Lower	Net	Index
September	9	71	20	-11	45.9
August	8	72	20	-12	44.7
July	10	72	18	-8	44.4
June	13	72	15	-2	47.4

COMMODITY PRICES



Prices declined in September for the fourth consecutive month. The Price index declined at the same sharp rate as in August 43.1%, which is the lowest since April 1986 (42.8%). The number of commodities reported higher in price remained at nine, while 25 items were reported lower priced.

Prices	%Higher	%Same	%Lower	Net	Index
September	10	65	25	-15	43.1
August	13	57	30	-17	43.1
July	16	61	23	-7	46.9
June	16	66	18	-2	48.5

DOWN IN PRICE:

Aluminum (6th consecutive month), **Nickel** (4th consecutive month; used heavily in making stainless steel, plating metals and batteries). **Steel** (After being reported up in price in May for 32nd time in 33 months). **Printing Paper**, (3rd consecutive month; after being reported up in price in April for 25th time in 28 months). **Ethylene** (5th consecutive month; used heavily in making ethylene oxide, plastic resins and glycols). **Ethylene Derivatives, Methyl Ethyl Ketone** (MEK) (4th time in 7 months; used heavily as a chemical solvent in surface coatings and in making resins). **Methanol** (8th time in 9 months; used heavily as a solvent and in synthesizing other chemicals). **Toluene** (3rd consecutive month; used heavily in making explosives, dyes and benzoic acid; as a solvent in paint and as a gasoline additive). **Phthalic Anhydride** (2nd consecutive month; used heavily in making artificial resins, benzoic acid and phthalates). **Plastic Resins** (2nd consecutive month; after being reported up in price in April for 20th time in 21 months). **Polyethylene, Polyethylene Resin** (6th consecutive month; used heavily in making packaging materials and paper coatings). **Styrene** (5th consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic). **Polystyrene** (2nd consecutive month; used chiefly in making synthetic rubber, plastic resins and plastic). **Polyvinyl Chloride (PVC)** (3rd consecutive month; a rubber substitute in wire and cable coating; pipe, tubing, textile finishes and belting). **Polypropylene** (6th time in 8 months; used in making fabrics, carpets and yarns). **Propylene, Sulfur** (2nd consecutive month; used heavily in making matches, gunpowder, sulfuric acid, plastics, enamels and bleaching woodpulp). **Sulfuric Acid, Fuel Oil** (2nd time in 3 months). **Natural Gas** (3rd consecutive month; after being reported up in price in June). **Silicon** (used heavily in making transistors, diodes and semiconductors). **DRAMS** (2nd time in 5 months; dynamic electronic memory devices used heavily in computers).

BUYING POLICY

Lead times for Capital Expenditures lengthened slightly in September. The number of members reporting lead times in the significant 6 months and longer category was 54%, up somewhat from 52% the two previous months and the most since May (55%).

Lead times for Production Materials remained virtually unchanged in September. The number of members reporting lead times of 30 days or less increased to 54%, down slightly from 55% in August.

Lead times for Maintenance, Repair and Operating (MRO) Supplies lengthened slightly. The number of purchasers reporting buying hand-to-mouth decreased to 44%, down from 48% in August, which was the most since January 1987 (50%).

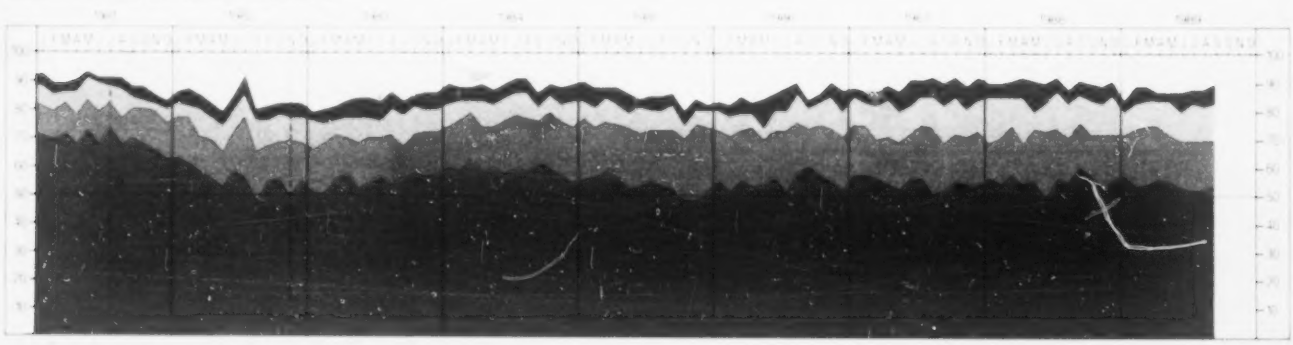
Percent Reporting

Capital Expenditures	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
September	10	7	13	16	54
August	10	8	12	18	52
July	12	9	13	13	53
June	13	8	10	17	51

Production Materials	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
September	16	38	28	14	4
August	16	39	29	13	3
July	16	37	31	14	3
June	14	38	30	13	5

MRO Supplies	Hand to Mouth	30 Days	60 Days	90 Days	6 Mos. and Longer
September	44	42	11	2	1
August	48	36	13	1	2
July	44	42	11	3	0
June	41	44	12	3	0

CAPITAL EXPENDITURES



Commodity Report
September 1989

TEXTILES — Prepared by the NAPM Textile Committee: Gerry R. Korver, C.P.M., K-Products Inc., Orange City, Iowa.

COTTON, POLYESTER, GREIGE GOODS: Lack of supply continues to hold fiber pricing high. Major producers of polyester continue to take advantage of Eastman Chemicals departure. An overseas firm is building a new facility in the Carolinas, but will not have an impact until late 1990. Cotton crop production remains tentative, but indications are that supply and pricing will remain consistent through second quarter of next year.

NYLON AND SPECIALTY FABRICS: Nylon supply has been tight for some time, but may loosen in the next two quarters. However, pricing will not decrease for some time as the demand remains high. Increases may be seen on certain denier, but should be minimal. Specialty fabrics have seen the same increases in raw material but to a higher extent. Concerns are not a question of fighting the price increases, but rather trying to maintain the availability of supply. Pricing is somewhat stabilized for the present, however, there is talk of January price increases. Again the main question is continued supply of quality raw material.

CONVERTING: Converting continues to see firm lead times, with most of the increase for raw materials passed onto the customers. Anticipate small increases again at the beginning of next year.

NON-FERROUS METALS — Prepared by the NAPM Non-Ferrous Metals Committee. Chair, Sharon Sinke, C.P.M., Frost, Inc., Grand Rapids, MI.

ALUMINUM: Although aluminum prices have eroded ($1.17 lb. at January to the low $.80 lb. range presently), the price is now stabilized, somewhat buoyed by premium grades of material. Mill products to face competition from alternative materials, and prices generally lag behind ingot prices.

Supply and demand are balanced, with current primary production slightly ahead of apparent demand. This may lead to some building of inventories.

Exports continue their strong rise; therefore, a stimulus continues in the economy, particularly manufacturing. Virtually all projected growth in 1988-90 will come through the export sector.

Demand remains fairly high in the aluminum industry. By historical standard, any slippage in shipments will be modest. For the balance of 1989 U.S. and Western World aluminum industry shipments are projected to rise slower than originally projected. 2.3% in 1990 shipments will rise a very modest 1% before accelerating 4 to 5% in 1991.

Aerospace is booked for this year with airline requirements backlogged into the mid-1990s. Even with sluggish auto industry sales forecast, an increase in usage will offset a reduced number of vehicles sold. Distribution remains strong.

MAGNESIUM: Primary magnesium shipments for the desulfurization of iron and steel have increased again in 1988 for the sixth year. Shipments were up more than 30 percent from 1987, demand has more than tripled from 1982 levels. This growth rate is attributed to continually increased use by U.S. and Canadian die casters; most of this growth fueled by automotive. High tech computer components are also contributing. If this rate of growth continues, the demand will be 50,000,000 pounds in 1992.

As of this writing, the producer stocks dropped another 1200 metrics tons in the second quarter to a new low of 25,400 MT. This is only a 37 days supply. Production has inched up 1,000 MT to 62,700 MT with all of the increase coming from Western Europe; shipments by the Western World's producers is unchanged from the first quarter of this year.

NICKEL: Prices are strong now and will probably continue to get stronger because the stainless steel mills, nickel inventories are low, they are in the market to buy. First quarter 1990 is expected to be strong because of the balance in market supply and demand. One thing that could soften the nickel market is an economic recession in 1990.

Little new development is expected in nickel mining and refining to affect the market. Nickel price will continue at current levels or higher for the next 6 to 9 months.

Inco and Falconbridge labor contract both expire in 1991.

TIN: After advancing to $4.95 lb. prior to the resumption of LME tin trading on 6.1, tin fell to $3.65 this summer. The collapse was due to lack of consumer buying during the summer vacation period rather than a surplus of stock. With the outlook for a recession within the next 9 months looking more remote, we look for a reasonable demand, without excessive stocks. Prices should rise steadily from the present $4.00 lb. to $4.50 within the next 6 months with no shortages projected.

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